# CCS China Advantages

## 1AC Advantages

### 1AC – CBM

#### New technology, especially from the US is key to CBM development that solves a massive gas shortfall which causes overseas expansion now

PwC citing Allan Zhang, director, PwC Sustainability and Climate Change, is a specialist in environmental policy and economics in China, 5-14-12, [“China GreenTech 2012: Shale Gas and Coalbed Methane could meet China’s booming domestic energy demand,” Rowena Mearley, <http://www.ukmediacentre.pwc.com/News-Releases/China-GreenTech-2012-Shale-Gas-and-Coalbed-Methane-could-meet-China-s-booming-domestic-energy-demand-1245.aspx>] E. Liu

Corporate PR Senior Manager, PwC, <http://www.ukmediacentre.pwc.com/News-Releases/China-GreenTech-2012-Shale-Gas-and-Coalbed-Methane-could-meet-China-s-booming-domestic-energy-demand-1245.aspx>] E. Liu

China has maintained its position as the world’s greentech leader despite continuing global economic volatility and slowing domestic growth, with vast unconventional domestic gas reserves, including shale gas and coal-bed methane, potentially easing the country’s energy shortfall.¶ The latest analysis by The China Greentech Initiative (CGTI) - The China Greentech Report 2012 - reports that while the greentech sector faces macroeconomic challenges, China’s overwhelming need for energy and environmental technology will continue to propel rapid growth in greentech markets. ¶ The report cites China’s “urgent” needs in energy and environment driving developments. The country now imports over half of its oil, in addition to its over-reliance on coal, producing high emissions of carbon and other air and water pollutants. ¶ China’s domestic conventional gas production is described as “stretched to the limit”, but vast unconventional domestic gas reserves, including shale gas and coal-bed methane, could ease China’s gas shortfall, which is expected to grow nine-fold by 2015. The industry would however need to overcome major pricing, regulatory, distribution and water challenges. ¶ Allan Zhang, director, PwC Sustainability and Climate Change, is a specialist in environmental policy and economics in China. He commented:¶ “The basic fact is that to ensure energy security and supply, China has no choice but to develop and use new forms of energy to meet the growing and seemingly insatiable demand. Technological advances over the years have made wider use of unconventional gases possible, and opened up new sources of energy supply, although many technical hurdles still exist. ¶ “Companies with experience of advanced technologies, or management skills in exploring Coalbed Methane projects on a large commercial scale will be in a great position in the market. The lack of experience and know-how of the Chinese companies in dealing with unconventional energy such as shale gas offer the European and American companies the chance of riding on China's rapid development.”¶ Other findings from The China Greentech Report 2012 include:¶ Private equity and venture capital investments in China’s private water sector increased from $US 50 million in 2010 to US$ 400 million in just the first four months of 2011 ¶ Wind and solar farms costs have fallen dramatically: onshore wind farms in China can now be completed for around RMB 7000/kW and photovoltaic (PV) system costs have decreased from RMB 74,000/kW in 2007 to less than RMB 13,000/kW in late 2011 with costs continuing to drop ¶ Though China’s green building market is small, building energy efficiency policies will likely lead to rapid industry expansion over the next five years¶ China began the Construction Phase of its 2009-2020 Strong and Smart Grid Plan in 2011, initiating the world’s largest effort to build a reliable, efficient and smart grid.¶ Given the scale and rapid growth of China’s energy needs, to secure its energy supply, China has continued an earlier trend of overseas expansion, with companies going abroad for energy deals in the areas of oil and renewable energy. The deals in 2011 also highlighted a new push for investing in basic infrastructure, such as European water and power grid utilities, to achieve asset diversification and financial returns.

#### Investment in CBM is coming now but recovery is limited – CCS gas is key to increase it

Hongguan Yua, School of Chemical and Environmental Engineering, Shandong University of Science and Technology, et al., Guangzhu Zhou, Weitang Fan, Jianping Ye, 11-29-06, [“Predicted CO2enhanced coalbed methane recovery¶ and CO2sequestration in China,” International Journal of Coal Geology 71 (2007) 345–357, <http://www.math.oregonstate.edu/~mpesz/download/coal/Yu_2007ECBM_CHINA.pdf>] E. Liu

China has abundant coalbed methane resources with¶ CBM reserves estimated at 30 to 35Tm3(Zhang et al.,¶ 1991). The average theoretical recovery ratio of CBM¶ with conventional techniques is estimated to be 27% in¶ China (Fu et al., 2000), and it is affected by the¶ permeability of the coal bed, the methane saturation, the¶ well spacing, and the recovery method. In recent years,¶ CBM exploration and development have been very¶ active in China. China has mastered the basic geological¶ theories and exploration methods of CBM. Especially in¶ the areas that are suitable for developing CBM,¶ breakthroughs have been made in optimum selection,¶ unbalanced drilling techniques, and reconstruction of¶ reserve layers. As for CBM exploration, China has¶ drilled 287 special CBM test wells from the 1980s to¶ 2004 (Sun, 2005). In the past, one important reason that¶ China lagged behind in developing CBM was that there¶ was no sound network of natural-gas trunk pipelines.¶ With the establishment of a pipeline system used to¶ transport natural gas from west China to east China, this¶ problem will be substantively solved.¶ Although China is not subject to any emissions¶ reduction target under the Kyoto Protocol's first emission¶ control period, China is currently the second largest¶ energy consumer and greenhouse-gas emitter. Continued¶ rapid economic development will increase greenhouse¶ gases (GHGs) emissions. Forecast shows that the gross¶ CO2emissions amount of China will surpass that of the¶ UnitedStatesby2025,thusbecomingtheworldfirst.The¶ CO2emissions amount per capita in China, currently¶ maintained below the world average, will reach this¶ benchmark by 2025. Although such a result remains¶ below the CO2emissions amount per capita of developed¶ countries, China will lose the advantage of low CO2¶ emissions, which will confront China with great pressure¶ from the international community in the Protocol age. As¶ a result, the identification, evaluation and adoption of¶ suitable techniques to reduce CO2emissions in China are¶ an important research topic to support policy making.¶ Underground storage of GHGs is one of several¶ possible methods to reduce CO2 emissions to the¶ atmosphere.Coalseamsprovideoneofthemostattractive¶ sites due to the huge coal resources in China and the fact¶ the CO2adsorption into coal is high. On the other hand,¶ injected CO2into coals displaces the adsorbed methane¶ from the coal surface. The injection of CO2 in coalbeds¶ can enhance the recovery of coalbed methane (ECBM)¶ and at the same time it is a very attractive option for¶ geologic CO2storage as CO2is strongly absorbed onto¶ the coal. CO2-ECBM not only enhances CBM recovery,¶ but also sequestrates CO2(Mavor et al., 2002).

#### CCS injection provides enough gas for over 200 years

Hongguan Yua, School of Chemical and Environmental Engineering, Shandong University of Science and Technology, et al., Guangzhu Zhou, Weitang Fan, Jianping Ye, 11-29-06, [“Predicted CO2enhanced coalbed methane recovery¶ and CO2sequestration in China,” International Journal of Coal Geology 71 (2007) 345–357, <http://www.math.oregonstate.edu/~mpesz/download/coal/Yu_2007ECBM_CHINA.pdf>] E. Liu

(1) The factors obtained with technical analysis and¶ basic case assumptions are reasonable and can be¶ used to study the CBM potential of primary¶ production, and the CO2sequestration capacity¶ and enhanced CBM recovery potential of Chinese¶ coal beds.¶ (2) Of the total CBM resources of 9.256Tm3in the¶ coal reservoirs with more than 4 m3/t of methane¶ content and less than 1500-m depth in four CBM¶ provinces and 29 CBM zones, 3.357Tm3CBM¶ can be recovered with primary CBM production,¶ accounting for 36.26% of the total resources less¶ than 1500-m depth, in which the main contribu-¶ tors are Qinshui and Eastern Yunnan–Weastern¶ Guizhou.¶ (3) As a whole, the ECBM recovery potential asso-¶ ciated with CO2sequestration is estimated to be¶ over 3.751Tm3, of which about 2.223Tm3of¶ ECBM potential is indicated with less than 1500-m¶ depth if 5.899Tm3remained resources is used to¶ CO2-ECBM, and about 1.528Tm3CBM can be¶ recovered within the 1500-m to 2000-m depth¶ intervalwithCO2-ECBM.Themajordevelopment¶ provinces to CBM potential include the North¶ China and south China CBM-province, and the¶ main contributors of ECBM include Qinshui,¶ Eastern Ordos in North China, and Eastern¶ Yunnan–Western Guizhou in south China.¶ (4) The CO2sequestration capacity of China coal¶ beds is estimated to be about 142.67Gt, of which¶ 86.84Gt CO2could be sequestrated into coal beds¶ with less than 1500-m depth, and 55.83Gt could¶ be stored into coal seams within the 1500-m to¶ 2000-m depth interval. The main contributors of¶ CO2sequestration are Qinghai, Eastern Ordos and¶ Eastern Yunnan–Weastern Guizhou CBM zone.¶ (5) China CBM resources can produce 218 years and¶ 86 years production demand of natural gas with¶ primary CBM and CO2-ECBM production,¶ according to natural gas production in 2002 and¶ forecasted production of natural gas in 2015.¶ Chinese coal seams could sequestrate over¶ 50 years of CO2quantity at the emission level¶ of CO2 in 2000, and store 26 years of CO2¶ emissions forecasted in 2020. About 6.4Gt CO2¶ emission decreases with total CBM production¶ potential obtained by primary production of CBM¶ and enhanced CBM using CO2injection.

#### China’s demand on international gas markets causes territorial disputes in the South China Sea

Sarah O’Hara, Professor of Geography, School of Geography, University Park, University of Nottingham and Hongyi Lai, Associate Professor, School of Contemporary Chinese ¶ Studies, International House, Jubilee Campus, Nottingham¶ , 11, [“China’s “Dash for Gas”: Challenges and ¶ Potential Impacts on Global Markets,” Eurasian Geography and Economics, 2011, 52, No. 4, pp. 501–522, bellwether.metapress.com/index/J56R74667128X480.pdf] E. Liu

But while China is likely to have a major impact on gas markets in the short to medium ¶ term, it has made clear its intention to develop domestic supplies as well. Although onshore ¶ reserves are likely to be developed first, the potential for offshore gas resources is significant ¶ and their development is likely to come to the fore in the longer time frame. The gas reserves ¶ in the East China Sea and South China Sea could serve to intensify existing disputes over ¶ territorial waters between China and the neighboring nations. A dispute in the East China Sea ¶ between China and Japan over the Diaoyu (or Senkaku) Islands has resurfaced, and both are ¶ contesting sovereignty over the Chunxiao gas field. While the disputes between China and the ¶ Southeast Asian nations over territorial waters in the South China Sea have been long stand-¶ ing, in recent years China has indicated that the waters of the South China Sea fall within its ¶ core national interests, thereby hardening its stance in the dispute.¶ It is clear that in the space of five years China has emerged as a major part of the global ¶ gas industry, both as a consumer and potentially as a supplier. Its impact on global gas mar-¶ kets already is significant and will continue to grow. The implications for the gas industry ¶ will be far reaching and are likely to have huge implications on economic and geopolitical ¶ relations for a long time to come.

#### Disputes in the China Seas cause US war – Military force, Japan alliance, incidents

Avery Goldstein, David M. Knott Professor of Global Politics and International Relations in the Political Science Department, Director of the Center for the Study of Contemporary China, and Associate Director of the Christopher H. Browne Center for International Politics at the University of Pennsylvania, 9-1/4-11, [“Crisis Instability and US-China Relations: The Present (If Not Clear) Danger,” American Political Science Association, September 1-4, 2011, papers.ssrn.com/sol3/papers.cfm?abstract\_id=1900508] E. Liu

In contrast with the situation Taiwan Strait, the possibility that the US and China could find themselves in a crisis triggered by disputes in the South China Sea or the East China Sea has increased. Since 2005, a period of relatively low tension over sovereignty claims to maritime territories and seas in East Asia has given way to growing concern about the willingness and ability of China and its neighbors to resolve their differences peacefully.15 Beijing refuses to rule out the use of military force as the ultimate means for ensuring claims to what it views sovereign territory and adjacent waters. While the US is not a principal in any of these vexing regional disputes, Washington has clearly stated its principled opposition to the use of force to resolve such matters and, more to the point, has treaty commitments to two of the countries (Japan and the Philippines) contesting China’s claims, and increasingly close ties with a third (Vietnam).16 The potential implications are clearest in the East China Sea. The US has explicitly indicated that its military commitment under the US-Japan security treaty extends to all territories administered by Tokyo, including the key disputed islands (usually referred to as the Senkaku islands by Japan, and the Diaoyu islands by China).17 In addition, disagreements have intensified between China and the US over American military forces operating in the international seas and airspace near China. The US insists on its longstanding interest in freedom of navigation in and above waters beyond the 12 mile territorial limit that it defines as the high seas. China, by contrast, asserts that the waters in which unrestricted freedom of navigation extends to military vessels begins only outside the country’s EEZ— precluding unconstrained US air and naval operations beyond 12 miles but still within the 200 mile limit.18 This disagreement is not a merely an academic dispute about international law, both customary maritime law and the terms of UNCLOS (which China has ratified but the US has not). On the contrary, US naval vessels and aircraft conduct intelligence gathering activities in and above the waters within China’s EEZ that both sides know have important military implications. Moreover, the prospect for confrontations resulting from this disagreement is more than just conceivable; there have already been several publicly reported incidents.19 These incidents have precipitated angry standoffs between Chinese and American vessels, followed by each side restating its principled position20 They have also precipitated more frightening consequences (as in the case of the EP-3 collision with a trailing Chinese fighter jet that resulted in the death of the Chinese pilot and the emergency landing of the aircraft on Hainan followed by tense and difficult negotiations to release the American crew and aircraft). The fundamental disagreement between the US and China about rights of passage through and over maritime areas may also have volatile implications for vital SLOCs in the South China Sea near territories that Beijing claims as its own. The extensiveness of China’s claims to the Spratlys in particular could provide a basis for insisting that much of the South China Sea falls within China’s EEZ requiring foreign military vessels to seek Beijing’s consent before passing through its sea lanes.21 The sensitivity of this issue and its potential for Sino- American friction, was underscored during a 2010 ASEAN Regional Forum in Hanoi when China’s foreign minister reacted in an unexpectedly harsh way to Secretary of State Clinton’s rather mild diplomatic expressions of American hopes for a peaceful resolution of sovereignty disputes in the South China Sea and her suggestions that multilateral forums could be useful in this regard.22

#### Aggression over the South China Sea escalates --- miscalculation leads to nuclear war.

**Fisher**, 10/31/**2011** (Max – associate editor at the Atlantic, 5 Most Likely Ways the U.S. and China Could Spark Accidental Nuclear War, The Atlantic, p. http://www.theatlantic.com/international/archive/2011/10/5-most-likely-ways-the-us-and-china-could-spark-accidental-nuclear-war/247616/#slide1)

After 10 years of close but unproductive talks, the U.S. and China still fail to understand one another's nuclear weapons policies, according to a disturbing report by Global Security Newswire. In other words, neither the U.S. nor China knows when the other will or will not use a nuclear weapon against the other. That's not due to hostility, secrecy, or deliberate foreign policy -- it's a combination of mistrust between individual negotiators and poor communication; at times, something as simple as a shoddy translation has prevented the two major powers from coming together. Though nuclear war between the U.S. and China is still extremely unlikely, because the two countries do not fully understand when the other will and will not deploy nuclear weapons, the odds of starting an accidental nuclear conflict are much higher. Neither the U.S. nor China has any interest in any kind of war with one other, nuclear or non-nuclear. The greater risk is an accident. Here's how it would happen. First, an unforeseen event that sparks a small conflict or threat of conflict. Second, a rapid escalation that moves too fast for either side to defuse. And, third, a mutual misunderstanding of one another's intentions. This three-part process can move so quickly that the best way to avert a nuclear war is for both sides to have absolute confidence that they understand when the other will and will not use a nuclear weapon. Without this, U.S. and Chinese policy-makers would have to guess -- perhaps with only a few minutes -- if and when the other side would go nuclear. This is especially scary because both sides have good reason to err on the side of assuming nuclear war. If you think there's a 50-50 chance that someone is about to lob a nuclear bomb at you, your incentive is to launch a preventative strike, just to be safe. This is especially true because you know the other side is thinking the exact same thing. In fact, even if you think the other side probably won't launch an ICBM your way, they actually might if they fear that you're misreading their intentions or if they fear that you might over-react; this means they have a greater incentive to launch a preemptive strike, which means that you have a greater incentive to launch a preemptive strike, in turn raising their incentives, and on and on until one tiny kernel of doubt can lead to a full-fledged war that nobody wants. The U.S. and the Soviet Union faced similar problems, with one important difference: speed. During the first decades of the Cold War, nuclear bombs had to be delivered by sluggish bombers that could take hours to reach their targets and be recalled at any time. Escalation was much slower and the risks of it spiraling out of control were much lower. By the time that both countries developed the ICBMs that made global annihilation something that could happen within a matter of minutes, they'd also had a generation to sort out an extremely clear understanding of one another's nuclear policies. But the U.S. and China have no such luxury -- we inherited a world where total mutual destruction can happen as quickly as the time it takes to turn a key and push a button. The U.S. has the world's second-largest nuclear arsenal with around 5,000 warheads (first-ranked Russia has more warheads but less capability for flinging them around the globe); China has only about 200, so the danger of accidental war would seem to disproportionately threaten China. But the greatest risk is probably to the states on China's periphery. The borders of East Asia are still not entirely settled; there are a number of small, disputed territories, many of them bordering China. But the biggest potential conflict points are on water: disputed naval borders, disputed islands, disputed shipping lanes, and disputed underwater energy reserves. These regional disputes have already led to a handful of small-scale naval skirmishes and diplomatic stand-offs. It's not difficult to foresee one of them spiraling out of control. But what if the country squaring off with China happens to have a defense treaty with the U.S.?

#### China war escalates and goes nuclear

Lee J. Hunkovic **--** professor at American Military University, 09, [“The Chinese-Taiwanese Conflict Possible Futures of a Confrontation between China, Taiwan and the United States of America”, American Military University, p.54]

A war between China, Taiwan and the United States has the potential to escalate into a nuclear conflict and a third world war, therefore, many countries other than the primary actors could be affected by such a conflict, including Japan, both Koreas, Russia, Australia, India and Great Britain, if they were drawn into the war, as well as all other countries in the world that participate in the global economy, in which the United States and China are the two most dominant members. If China were able to successfully annex Taiwan, the possibility exists that they could then plan to attack Japan and begin a policy of aggressive expansionism in East and Southeast Asia, as well as the Pacific and even into India, which could in turn create an international standoff and deployment of military forces to contain the threat. In any case, if China and the United States engage in a full-scale conflict, there are few countries in the world that will not be economically and/or militarily affected by it. However, China, Taiwan and United States are the primary actors in this scenario, whose actions will determine its eventual outcome, therefore, other countries will not be considered in this study.

### 1AC – Energy Wars

#### China’s energy dependence causes multiple flashpoints for dispute and war now

Michael Richardson, visiting senior research fellow at the Institute of South East Asian Studies in Singapore, 6-7-12, [“Thirst for energy driving China's foreign policy,” Japan Times, <http://www.japantimes.co.jp/text/eo20120607mr.html>] E. Liu

SINGAPORE — The United States and China, the world's top users of energy, are heading in opposite directions. It is a trend that has major geostrategic implications for the Asia-Pacific region. The U.S. is more certain that most of its future oil and gas will be produced at home. It is becoming less reliant on imported oil and natural gas as it ramps up domestic output and consumes fewer liquid fuels because of falling demand and energy saving advances, particularly in transport and industry. Meanwhile, China is becoming ever more dependent on oil and gas shipped or piped into the country, mainly from faraway sources of supply that are often in politically volatile parts of world, including the Middle East, Africa and Central Asia. As a result, Beijing's sense of insecurity about future energy supplies is rising. China is modernizing its armed forces not just to reclaim Taiwan by military means if necessary. China wants to protect its maritime trade routes and secure access to offshore energy, mineral and fisheries resources in nearby seas, including the East China Sea — where it faces conflicting claims to jurisdiction from Japan — and the South China Sea, where its claims to jurisdiction are contested by the Philippines, Vietnam, Malaysia, Taiwan, Indonesia and Brunei. China also wants to enhance its security by establishing an offshore zone of influence that it will be able dominate, instead of the U.S. and regional allies. Despite America's recently declared strategic "pivot" to Asia, its relative power and influence is declining. This is unlikely to change even if China's growth slows somewhat. As America gains energy security in a time of cost-cutting, it will have less incentive to continue expensive military protection of maritime supply lines in increasingly contested areas such as the seas off China's coast, the oil and gas-rich Persian Gulf, and around the Middle East and Africa, prompting China to extend its own military reach into the Indian Ocean, through which so much of its imported oil and gas comes. This will heighten tensions with India. Stephen Walt, a professor of international affairs at Harvard University's Kennedy School of Government has projected the outcome of U.S.-China economic, military and energy trends in this way: "If China is like all previous great powers, including the U.S., its definition of 'vital' interests will grow as its power increases — and it will try to use its growing muscle to protect an expanding sphere of influence. "Given its dependence on raw-material imports (especially energy) and export-led growth, prudent Chinese leaders will want to make sure that no one is in a position to deny them access to the resources and markets on which their future prosperity and political stability depend. "This situation will encourage Beijing to challenge the current U.S. role in Asia. Over time, Beijing will try to convince other Asian states to abandon ties with America, and Washington will almost certainly resist these efforts. An intense security competition will follow." The most recent sign of this regional struggle for supremacy is in the South China Sea where China and the Philippines, an ally of the U.S., have been at loggerheads for nearly two months over ownership and control of Scarborough Shoal, a reef and fishing ground that is far closer to the Philippines than to China. Such disputes can be contained. Or they can lead to China prevailing over weaker, less determined opponents. Or they can result in armed conflict. If the U.S. or its ally Japan became involved, there could be a wider war that would destabilize Asia. Is there a way for China to emulate the U.S. and become substantially less dependent on foreign oil and gas? Until 1993, China produced enough crude oil to meet its needs. But as growth surged, oil imports rose. China now imports 55 percent of its oil consumption, a ratio that is set to increase. Natural gas, the least polluting of fossil fuels, is on a similar trend line. By 2020, China's gas imports by pipeline and sea will make up nearly 33 percent of demand, up from around 20 percent now and none in early 2006, when China cease to be self-sufficient in gas.

#### US investment in CCS is key to collaboration with China – Solves resource wars, environment and social unrest

David Wendt, co-founded the Jackson Hole Center for Global Affairs in 2002 and has ¶ been its president since that time, leader in a U.S. bicentennial program on global interdependence at the World ¶ Affairs Council of Philadelphia (1975-77); a program on global health, population, and ¶ environmental issues at the Center for Strategic and International Studies, in ¶ Washington, D.C. (1977-98); and the international program of Idaho State University, in ¶ Pocatello, Idaho (1998-2006), 8-08, [“CLEAN COAL: ¶ U.S.-CHINA COOPERATION ¶ IN ENERGY SECURITY,” EastWest Institute, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?ots591=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&lng=en&id=104337>] E. Liu

Given the proper circumstances and choices, therefore, an energy security ¶ strategy based on domestic coal supplies could go a long way to helping both ¶ the United States and China insulate themselves somewhat from the ¶ worldwide scramble for oil and natural gas. In itself, however, such a strategy ¶ may not go far enough. Indeed, if pursued in mutual isolation, such a strategy ¶ promises only conflict in another form. ¶ ¶ The reason is that, left to its own devices, each country will find itself facing ¶ sub-optimal range of energy choices, each of which can ultimately be pursued ¶ only at the expense of the planet. Accessing unconventional energy sources ¶ such as oil shale or tar sands or gasifying coal to produce liquid transportation ¶ fuel are very expensive processes that require very high energy inputs in ¶ relation to energy outputs. When the cost of addressing environmental ¶ 11 ¶ ¶ externalities like carbon controls is added, the cost of developing these ¶ sources becomes prohibitive. ¶ Faced with the mounting pressures of the search for secure sources of ¶ energy, it is extremely unlikely that either the United States or China would ¶ chose to pay the full cost of these environmental externalities as opposed to ¶ deferring them to future generations. Sooner or later, however, these costs will ¶ need to be confronted. Worsening climate change and a deteriorating global ¶ environment will lead to resource scarcities, cross-border pollution, and other ¶ pressures on natural and human resources that can only increase the potential ¶ for bilateral conflict. ¶ Pursued independently, therefore, energy security strategies based on clean ¶ coal are no more a prescription for avoiding conflict between the United States ¶ and China than a strategy of subsidizing urban consumers of energy is a ¶ prescription for avoiding social unrest in China. In both cases, it is the ¶ environment that stands in the way. A more feasible model for the pursuit of ¶ energy security based on clean coal may be for the United States and China ¶ to engage in a cooperative effort, each compensating for the other’s clean coal ¶ vulnerabilities by sharing technologies in its areas of comparative strength. ¶ CCS provides an obvious focus from the U.S. standpoint for such a strategy of ¶ clean coal technology exchange with China. Unlike China, the United States ¶ has many capabilities already in place for the full-scale development, ¶ demonstration, and deployment of CCS. These resources include world-class ¶ geological expertise, extensive experience in computer modeling, simulation ¶ and mathematical computation, and advanced capabilities in chemical process ¶ engineering and analysis. Even though, as we have seen, the United States ¶ has barely scratched the surface in terms of allocating these resources in the ¶ service of CCS, the lessons are there, waiting to be learned and shared with ¶ China. ¶ This disparity in resources and expertise relevant to CCS presents an ¶ opportunity for the United States to help China accelerate its own program of ¶ CCS demonstration, development, and deployment in the interests of peace ¶ as well as the future of the planet. Although China is probably now not ready ¶ for full CCS deployment, it cannot defer this option indefinitely as it ¶ contemplates future development of CTL and other coal-based transportation ¶ fuels (e.g., methanol) in addition to its current focus on advanced clean coal ¶ power generation. ¶ In the absence of accompanying measures for CCS, however, the prospect of ¶ China’s development of CTL presents extremely serious implications for the ¶ 12 ¶ ¶ global environment and, ultimately, U.S security. It is at least as much in the ¶ U.S.’s long term national security interests to prevent such an outcome as it is, ¶ for example, to forestall the prospect of a world-wide grab for oil. As Gen. ¶ Richard L. Lawson (USAF-ret.) has said with respect to CCS, “We need to ¶ develop it, test it, and take it over there [to China] and share it as our ¶ investment in peace in the second half of the twentieth century.”

#### China’s demand on gas markets causes territorial disputes in the China seas

Sarah O’Hara, Professor of Geography, School of Geography, University Park, University of Nottingham and Hongyi Lai, Associate Professor, School of Contemporary Chinese ¶ Studies, International House, Jubilee Campus, Nottingham¶ , 11, [“China’s “Dash for Gas”: Challenges and ¶ Potential Impacts on Global Markets,” Eurasian Geography and Economics, 2011, 52, No. 4, pp. 501–522, bellwether.metapress.com/index/J56R74667128X480.pdf] E. Liu

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#### Those cause US and Japan war – Military force, Japan alliance, incidents

Avery Goldstein, David M. Knott Professor of Global Politics and International Relations in the Political Science Department, Director of the Center for the Study of Contemporary China, and Associate Director of the Christopher H. Browne Center for International Politics at the University of Pennsylvania, 9-1/4-11, [“Crisis Instability and US-China Relations: The Present (If Not Clear) Danger,” American Political Science Association, September 1-4, 2011, papers.ssrn.com/sol3/papers.cfm?abstract\_id=1900508] E. Liu

In contrast with the situation Taiwan Strait, the possibility that the US and China could find themselves in a crisis triggered by disputes in the South China Sea or the East China Sea has increased. Since 2005, a period of relatively low tension over sovereignty claims to maritime territories and seas in East Asia has given way to growing concern about the willingness and ability of China and its neighbors to resolve their differences peacefully.15 Beijing refuses to rule out the use of military force as the ultimate means for ensuring claims to what it views sovereign territory and adjacent waters. While the US is not a principal in any of these vexing regional disputes, Washington has clearly stated its principled opposition to the use of force to resolve such matters and, more to the point, has treaty commitments to two of the countries (Japan and the Philippines) contesting China’s claims, and increasingly close ties with a third (Vietnam).16 The potential implications are clearest in the East China Sea. The US has explicitly indicated that its military commitment under the US-Japan security treaty extends to all territories administered by Tokyo, including the key disputed islands (usually referred to as the Senkaku islands by Japan, and the Diaoyu islands by China).17 In addition, disagreements have intensified between China and the US over American military forces operating in the international seas and airspace near China. The US insists on its longstanding interest in freedom of navigation in and above waters beyond the 12 mile territorial limit that it defines as the high seas. China, by contrast, asserts that the waters in which unrestricted freedom of navigation extends to military vessels begins only outside the country’s EEZ— precluding unconstrained US air and naval operations beyond 12 miles but still within the 200 mile limit.18 This disagreement is not a merely an academic dispute about international law, both customary maritime law and the terms of UNCLOS (which China has ratified but the US has not). On the contrary, US naval vessels and aircraft conduct intelligence gathering activities in and above the waters within China’s EEZ that both sides know have important military implications. Moreover, the prospect for confrontations resulting from this disagreement is more than just conceivable; there have already been several publicly reported incidents.19 These incidents have precipitated angry standoffs between Chinese and American vessels, followed by each side restating its principled position20 They have also precipitated more frightening consequences (as in the case of the EP-3 collision with a trailing Chinese fighter jet that resulted in the death of the Chinese pilot and the emergency landing of the aircraft on Hainan followed by tense and difficult negotiations to release the American crew and aircraft). The fundamental disagreement between the US and China about rights of passage through and over maritime areas may also have volatile implications for vital SLOCs in the South China Sea near territories that Beijing claims as its own. The extensiveness of China’s claims to the Spratlys in particular could provide a basis for insisting that much of the South China Sea falls within China’s EEZ requiring foreign military vessels to seek Beijing’s consent before passing through its sea lanes.21 The sensitivity of this issue and its potential for Sino- American friction, was underscored during a 2010 ASEAN Regional Forum in Hanoi when China’s foreign minister reacted in an unexpectedly harsh way to Secretary of State Clinton’s rather mild diplomatic expressions of American hopes for a peaceful resolution of sovereignty disputes in the South China Sea and her suggestions that multilateral forums could be useful in this regard.22

#### Sino-Japan war draws in the US and causes regional nuclearization

Richard Samuels, IR prof at MIT, 99, The U.S. Japan Alliance: Past, Present, and Future, p. 6-7

The same forces that lead China and Japan into an adversarial relationship in the first place might well push them to the brink of war. From a U.S. perspective, this would be disastrous, for several reasons: -War between two of America's largest trading partners would be devastating to the U.S. economy -U.S. involvement would be difficult to avoid in a war between a former ally and a former enemy -War between a nuclear power and a threshold nuclear power would push the envelope in new and disconcerting ways -War between the two would be (another) humanitarian disaster -Nuclearization in Japan would press both Koreas to do the same, and perhaps pressure other Asian nations to follow suite. Even if China and Japan did not go to war, a Cold War between the two great powers could impose high costs on the region, and indeed the globe, if the last simmering conflict between two giants on the world scene has taught us anything. At a minimum, the remarkable (and hard-earned) domestic politics stability in Japan would further unravel, creating even greater uncertainties for its foreign policy and its evolving role as provider of global public goods.

#### China war escalates and goes nuclear

Lee J. Hunkovic **--** professor at American Military University, 09, [“The Chinese-Taiwanese Conflict Possible Futures of a Confrontation between China, Taiwan and the United States of America”, American Military University, p.54]

A war between China, Taiwan and the United States has the potential to escalate into a nuclear conflict and a third world war, therefore, many countries other than the primary actors could be affected by such a conflict, including Japan, both Koreas, Russia, Australia, India and Great Britain, if they were drawn into the war, as well as all other countries in the world that participate in the global economy, in which the United States and China are the two most dominant members. If China were able to successfully annex Taiwan, the possibility exists that they could then plan to attack Japan and begin a policy of aggressive expansionism in East and Southeast Asia, as well as the Pacific and even into India, which could in turn create an international standoff and deployment of military forces to contain the threat. In any case, if China and the United States engage in a full-scale conflict, there are few countries in the world that will not be economically and/or militarily affected by it. However, China, Taiwan and United States are the primary actors in this scenario, whose actions will determine its eventual outcome, therefore, other countries will not be considered in this study.

### 1AC – Energy Nexus

#### CCS certainty is key to US-China cooperation– The alternative is conflicts over fossil fuels

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There are three distinct international regimes that the US and China have to think¶ about in an integrated way and without the luxury of all that much time to do so: the¶ climate change regime, the energy regime and the intellectual property rights regime.¶ On climate change the IPCC’s work shows that time is becoming increasingly short.¶ Essentially the major emitters have to peak by 2020 if there is to be a realistic chance of¶ keeping to the 2ºC guardrail. Unless China and the US both agree to take on serious¶ mitigation targets the world will be left to negotiate a climate regime that is primarily¶ about adaptation to dangerous climate change. The costs of this may well make the¶ current costs of mitigation look trivial. An immediate issue facing both countries is¶ what to do about their coal-based energy systems. The IEA’s emissions reduction¶ scenario that was discussed earlier shows that CCS has to arrive early. However, the¶ CSLF’s technology map suggests that it will not arrive till after 2020.38One important¶ issue is whether despite all the money being put into CCS enough is going into the¶ basic R&D that is required to make the delivery of zero emissions coal-fired electricity¶ an economic and technological reality. Encouraging the development of a R&D facility¶ along the lines of the original FutureGen project is one option.¶ However, given the uncertainties surrounding CCS, a better option for China and¶ the US may be to consider the role they might play together in helping to re-shape the¶ world’s energy regime. This regime might be summed up as a negotiated monopoly¶ regime in which the US has been the dominant actor and the IEA the most important¶ international organization. Little creative thinking has come out of the IEA on the role¶ of renewable energy in the world energy system. The IEA’s core business remains¶ fossil fuel and ensuring that the world has sufficient reserves of oil in place to deal¶ with disruptions to supply.39Continuing with a regime that is tilted towards fossil¶ fuels will increase each country’s perception of the other as a competitor in the game of¶ energy survival. The game of securing oil supplies is zero sum. The race to secure¶ fossil fuel supplies is more likely to trigger an adversarial power politics than it is the¶ co-operation that the world so desperately needs on energy and climate change.¶ Instead of setting themselves up for competition over energy China and the US should¶ look to the development of an alternative regime in which they might do more to co-¶ ordinate the emergence of renewable energy technologies in order to achieve their¶ energy security goals and that would help both work towards an emission reduction¶ scenario that is consistent with the 2ºC guardrail. One possible forum in which to begin¶ a discussion is the newly established International Renewable Energy Agency.40It¶ offers both the possibility of a fresh start, something that is less true of old world clubs¶ like the IEA and the OECD.

#### Energy cooperation with China is key to prevent competition and dependence on oil

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Fudan University, 4-5-12, [“The Role of Nontraditional Security in¶ China–US Relations: common ground or¶ contradictory arena?,” Journal of Contemporary China (2012), 21(76), July, 623–636, <http://www.tandfonline.com/doi/abs/10.1080/10670564.2012.666833>] E. Liu

Despite the many agreements and frameworks between China and the US, the¶ majority of these accords have yet to be implemented effectively. Following the¶ inauguration of Barack Obama as President of the United States, bilateral cooperation¶ onenergygainednewmomentum.On16July2009,USEnergySecretaryStevenChu¶ furthered energy cooperation during his visit to China. The two countries agreed to¶ establisha‘JointCleanEnergyResearchCenter’,whichwouldcreateenergy-efficient¶ cars, buildings, and new carbon capture technology. In November 2009, President¶ Obama’s visit to China was considered primarily as a ‘visit for energy’ (neng yuan¶ zhi xing). Since then, the Chinese and US governments have strengthened their¶ cooperationonenergybyaddressingtheWestinghouseAdvancedPressurizedReactor¶ (AP1000) and by signing the Memorandum of Cooperation (MOC) on nuclear safety.¶ This was conducted between the China National Nuclear Safety Administration¶ (NNSA/China) and the US Nuclear Regulatory Commission by setting up a shale¶ gas task force, the release of a US–China Joint Statement on Energy Security¶ Cooperation, and the launch of a new US–China Renewable Energy Partnership.¶ It is clear that energy has become an important part of the cooperation between¶ China and the US and that energy cooperation has promoted strategic relations in¶ other fields. However, despite the high level of cooperation between both nations¶ in the energy sector, there still remains a level of disagreement and divergence.¶ The overarching and guiding reason for Sino–US cooperation on energy issues is¶ that both countries believe that they are facing the same energy problems, which can¶ only be overcome with teamwork and a global effort. It is true that both nations are¶ facing the same threat, but to varying degrees. As a whole, the energy security¶ problem that the US currently faces is not as urgent as China’s. Usually, about¶ 40–50% of US oil imports are from the American continent and 20% or less from the¶ turbulent Middle East.21Among world powers, the US has the lowest dependency on¶ oil imports from the Middle East next to Russia. Therefore, energy security for the¶ US doesn’t have to deal with whether the US can meet its domestic oil consumption¶ demand, but rather how to control worldwide oil resources. Alternatively, China is¶ facing a totally different situation. China is an oil-scarce country with its overseas oil¶ dependence rising rapidly. Since the end of 2009, China’s foreign oil dependence has¶ already exceeded 50%. China’s dependency on oil from the Middle East is beyond¶ that of the United States. Due in part to this, it is no wonder the task of fueling the¶ Chinese society with a sustainable oil supply has become increasingly more difficult.¶ In other words, energy security is a core national interest for China. ¶ The energy strategies of China are sharply distinguished from those of the US. The¶ US possesses the strongest military force in the world and intends to use both high¶ political tools and market power to solve energy security problems. Currently, the US¶ is trying to diversify its oil import sources in order to strengthen greater independence¶ and freedom in dealing with Middle East issues. In the cases of the Iraq War and¶ South Sudan’s independence, US efforts showed a force advantage and superiority¶ over China and other international contenders. In the case of Libya, the US was apt to¶ choose military means to dispel Qaddafi, rather than negotiations and diplomacy,¶ which were advocated by China, Russia, and some European allies, such as Germany¶ and Italy. As a developing country, China’s military capabilities and international¶ influence remain far behind those of the US. China guarantees its energy security¶ mainly through robust market power and skillful diplomacy. Even though China¶ continually keeps a low profile in the energy market, China’s energy demand is rising¶ faster than most countries. The International Energy Agency (IEA) predicts that¶ China’s oil demand will rise to about ten million barrels per day by 2030, of which¶ 80% will be imported.22 This is projected to cause severe competition between China¶ and the US for the acquisition of oil. A historical narrative of the Western world¶ shows that if the two biggest energy consumers cannot handle their relations well,¶ then energy is a potential trigger for military conflict.23¶ Inthefieldoffossilfuels,itstandsthatcoordinatinginterestsandstrategiesbetween¶ China and the US could prove more difficult. For the sake of improving bilateral ties¶ and mutual interests, as well as for the sake of holding new and renewable energy as¶ a must-explore arena, it is necessary for China and the US to devote more effort to¶ collaboration in the energy sector. Perhaps further devotion to a mutually beneficial¶ energy relationship is deserving of more time than other issues between the two¶ nations. Certainly, the two countries have cooperated well and have signed plenty of¶ agreements, protocols, and initiatives. Some of those agreements have been put into¶ practice and have run a good course.

#### China’s oil dependence causes an alliance with Russia that hedges against the US

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For almost two decades, Russia has been a non-factor in the East Asian balance ¶ of power.1 This situation is about to change dramatically. The tapping of Siberia’s ¶ massive energy wealth, both oil and natural gas, will raise Russia’s profile in the ¶ region significantly. Indeed, the final orientation of the associated energy trans-¶ port infrastructure – toward China or toward Japan – may play a decisive role ¶ in the evolving balance of power in East Asia.¶ If the Kremlin favours Beijing, the resulting Sino-Russian energy nexus – ¶ joining the world’s fastest growing energy consumer with one of the world’s ¶ fastest growing producers – would support China’s growing claim to regional ¶ pre-eminence. From Beijing’s point of view, this relationship would promise a ¶ relatively secure and stable foundation for one of history’s most extraordinary ¶ economic transformations. At stake are energy reserves in eastern Russia that ¶ far exceed those in the entire Caspian Basin.2 Moreover, according to Chinese ¶ strategists, robust Sino-Russian energy links would decrease the vulnerability ¶ of Beijing’s sea lines of communication to forms of ’external pressure‘ in case ¶ of a crisis concerning Taiwan or the South China Sea.3 From the standpoint of ¶ global politics, the formation of the Sino-Russian energy nexus would represent ¶ a strong consolidation of an emergent bipolar structure in East Asia, with one ¶ pole led by China (and including Russia) and one led by the United States (and ¶ including Japan).4¶ Events in 2004, however, appeared to suggest that Tokyo might gain the upper ¶ hand regarding the future of Siberia’s energy infrastructure. Japan’s willingness to guarantee financing for the project – perhaps as much as $15 billion – together ¶ with the Kremlin’s aggressive prosecution of Mikhail Khordorkovsky, a major ¶ proponent of Sino-Russian energy ties, appeared to strengthen Tokyo’s hand. If ¶ Japan succeeds in this endeavour, a more multi-polar structure could emerge ¶ in East Asia. In particular, enhanced Russo-Japanese energy cooperation could ¶ spur the much-needed breakthrough on the bitterly contested ‘northern territo-¶ ries’, which Stalin seized in the closing days of the Second World War. Such a ¶ rapprochement could serve as an important restraint on growing Chinese ambi-¶ tions and appetites. ¶ Despite various statements made by top Russian officials during 2005 sug-¶ gesting that Russia will give priority to China over Japan as the recipient of oil ¶ supplies from Siberia, the issue has not been resolved definitively and pipeline ¶ construction plans will depend on the pace of development of industrial deposits ¶ of oil.5 During a November 2005 trip to Japan, Russian President Vladimir Putin ¶ said ‘we chose the Lake Baikal northern route, which will be costly, because we ¶ will be able to link it to the Pacific route. We would certainly like to cooperate with ¶ Japan.’6 In December 2005, Putin reiterated that the pipeline will reach the Pacific ¶ Ocean.7 But as the Yukos affair amply illustrates, internal political dynamics may ¶ be as important to the final decision as rational foreign policy and economic ¶ calculations. Continuing indecision by the Kremlin also reflects the enormous ¶ ambitions of the respective projects, and the weighty geopolitical consequences ¶ of the choice.¶ A Sino-Russian military exercise of unprecedented size took place in August ¶ 2005. The ‘coloured revolutions’ that had occurred in Georgia, Ukraine and ¶ Kyrgyszstan during 2003–05 gave a tangible impetus to Sino-Russian relations. ¶ Indeed, with the resultant July 2005 Shanghai Cooperation Organisation (SCO) ¶ demarche against the continuing presence of US bases in Central Asia, the broad ¶ geopolitical implications of a Sino-Russian energy nexus come into greater focus. ¶ Thirsty dragon¶ Russia’s vast energy resources have become only more enticing to Beijing ¶ strategists since China’s spectacular economic growth emerged as the most fun-¶ damental cause of surging world oil prices in the last five years. In 2003, PRC ¶ oil consumption increased by a whopping 31%, a record that may have been ¶ exceeded the following year. Early in 2004, China edged out Japan to become ¶ the second largest world crude importer. By the end of 2004, Chinese petroleum ¶ corporations imported almost half (more than 110 million tonnes) of the total ¶ annual consumption – which reached 250m tonnes. Estimates show that the ¶ imported volume will rise to 200m tonnes in 2010, and 250m tonnes in 2020.8 According to data from the International Energy Agency (IEA), the volume of ¶ imported crude will rise from 34% today to more than 80% by 2030. In other ¶ words, China will have to import approximately 10m barrels per day (b/d) of ¶ crude – roughly equivalent to US daily imports in 2000.9¶ According to Chinese sources, Beijing’s traditional¶ reliance on coal will be ¶ reduced in the future: from 77.9% in 1995 to 70% in 2005 to approximately 62.5% ¶ in 2015. Meanwhile, natural gas will receive preference for economic and eco-¶ logical reasons, constituting perhaps 9–10% of the energy mix in 2010. By 2020, ¶ natural gas consumption is expected to rise from the current 30bn cubic meters ¶ (bcm) to an estimated 200 bcm, of which 120bn will be imported. The increasing ¶ salience of imports is determined by the fact that China’s energy reserves are ¶ rather limited. Although China has substantial coal reserves (33% of the world ¶ supply), its oil (2–3%) and gas (1%) reserves are not large.

#### That alliance creates multiple scenarios for proliferation and war

Stephen Blank, Research Professor of National Security Affairs at the Strategic Studies Institute of the U.S. Army War College, 3-09, p[“Russia And Arms Control: Are There Opportunities For The Obama Administration?,” http://www.strategicstudiesinstitute.army.mil/pdffiles/pub908.pdf]

Consequently, the danger is that this ideological-strategic rivalry will harden, leading to a polarized, bilateral, and hostile division of Asia into blocs based on a Sino-Russian bloc confronting a U.S. alliance system led by alliances with Japan, South Korea, and Australia. Some Western writers have already opined that Sino- Russian relations appear to be tending towards an anti- American alliance in both Northeast and Central Asia.235 But more recently both Asian and Western writers have begun to argue that such a polarization in Asia could be taking shape. The shared interest of perceiving America as an ideological and geopolitical threat has also united Moscow and Beijing in a common cause.236 Already in the 1990s, prominent analysts of world politics like Richard Betts and Robert Jervis, and then subsequent Central Intelligence Agency (CIA) studies, postulated that the greatest security threat to American interests would be a Russian-Chinese alliance.237 Arguably, that is happening now and occurs under conditions of the energy crisis that magnifies Russia’s importance to China beyond providing diplomatic support, cover for China’s strategic rear, and arms sales.238 That alliance would encompass the following points of friction with Washington: strategic resistance to U.S. interests in Central and Northeast Asia, resistance to antiproliferation and pressures upon the regimes in Iran and North Korea, an energy alliance, an ideological counteroffensive against U.S. support for democratization abroad, and the rearming of both Russia and China, if not their proxies and allies, with a view towards conflict with America.239 One South Korean columnist, Kim Yo’ng Hu’i, wrote in 2005 that, China and Russia are reviving their past strategic partnership to face their strongest rival, the United States. A structure of strategic competition and confrontation between the United States and India on the one side, and Russia and China on the other is unfolding in the eastern half of the Eurasian continent including the Korean peninsula. Such a situation will definitely bring a huge wave of shock to the Korean peninsula, directly dealing with the strategic flexibility of U.S. forces in Korea. If China and Russia train their military forces together in the sea off the coast of China’s Liaodong Peninsula, it will also have an effect on the 21st century strategic plan of Korea. We will now need to think of Northeast Asia on a much broader scale. The eastern half of Eurasia, including Central Asia, has to be included in our strategic plan for the future.240 Since then, Lyle Goldstein and Vitaly Kozyrev have similarly written that, If the Kremlin favors Beijing, the resulting Sino-Russian energy nexus—joining the world’s fastest growing energy consumer with one of the world’s fastest growing producers—would support China’s growing claim to regional preeminence. From Beijing’s point of view, this relationship would promise a relatively secure and stable foundation for one of history’s most extraordinary economic transformations. At stake are energy reserves in eastern Russia that far exceed those in the entire Caspian basin. Moreover, according to Chinese strategists, robust Sino-Russian energy links would decrease the vulnerability of Beijing’s sea lines of communication to forms of “external pressure” in case of a crisis concerning Taiwan or the South China Sea. From the standpoint of global politics, the formation of the Sino-Russian energy nexus would represent a strong consolidation of an emergent bipolar structure in East Asia, with one pole led by China (and including Russia) and one led by the United States (and including Japan).241 Russia’s tie to China certainly expresses a deep strategic identity or congruence of interests on a host of issues from Korea to Central Asia and could have significant military implications. Those implications are not just due to Russian arms sales to China, which are clearly tied to an anti-American military scenario, most probably connected with Taiwan. They also include the possibility of joint military action in response to a regime crisis in the DPRK.242

### 1AC – Internal Instability

#### Economic troubles and political transition make Chinese instability likely – Empirically causes revolts

The Economist, 1-28-12, [“A dangerous year,” <http://www.economist.com/node/21543477>] E. Liu

Strikes have become increasingly frequent at privately owned factories in recent years, often involving workers demanding higher wages or better conditions. Private firms, like state ones, are usually strong-armed by officials into buying off strikers. The thinking is that capitulating keeps a lid on news coverage and helps to prevent unrest from spreading. Yet the explosive growth in the use of home-grown versions of Twitter has made it easy for protesters to convey instant reports and images to huge audiences. The Communist Party's capacity to stop ripples of unease from widening is waning—just as economic conditions are making trouble more likely. Anger at the bottom At a cheap restaurant in Qingbaijiang, opposite a dormitory compound for Pangang employees, grimy steelworkers complain that the government's promise of an extra 260 yuan ($41) a month is hardly enough. Many of the lowest-paid earn as little as $190 monthly. But the workers know that the steel industry is struggling—and that vengeance on persistent troublemakers can be fierce. A police notice warns of legal action, including imprisonment, against any strikers who continue “disrupting public order”. Security agents follow your correspondent in an unmarked car. All this is partly a result of the curb on China's stimulus spending and carefree (reckless, many would say) bank lending in the wake of the global financial crisis of 2008. There are fewer new construction projects; demand for steel has flattened. Pangang's plant in Qingbaijiang is running at a loss. The number of steel firms in the red rose from nine in September to 25 a month later. Even though the government is less worried about inflation now than it was a few months ago, and is releasing the economic brakes a little, the steel industry is expecting a lean period. Some firms might have to close. Overall economic growth is still looking robust. In the final three months of 2011 China's economy grew by 8.9% compared with the same period a year earlier—enviable by almost anyone else's standards, though still the slowest since the second quarter of 2009. The slowdown has so far been gentle, and in line with government efforts to prevent overheating. But this does not stop officials worrying that the coming year could be unusually difficult. Europe is the biggest buyer of Chinese products—and the euro zone's travails have plunged many manufacturers into despair. Depressed demand in both Europe and America has taken its toll on factories. The steelworkers' strike was one of many in recent months, most of them in China's export-manufacturing heartlands near the coast (see map). Chinese exporters do not face as big a shock now as they did in late 2008, when the financial crisis caused a sudden collapse in demand and the loss of as many as 20m migrant-labour jobs. But that time China's recovery was rapid, helped by stimulus spending of 4 trillion yuan (more than $630 billion at today's exchange rate), as well as developed economies' own stimulus projects. The impact on migrant workers was further mitigated by the coincidence of the worst of the downturn with the lunar new-year holiday, when most migrants go home for lengthy periods. This time exporters face protracted slow growth in developed economies, and the risk that the euro zone's difficulties might worsen. China's policymakers do not want another lending spree that might burden the financial system with more bad debt, on top of the borrowing accumulated during the previous binge. The country's relatively low budget deficit (about 2.5% of GDP in 2010) gives it room to spend more on social housing, social security, tax cuts for small firms and consumer subsidies. These could help promote private consumption—eventually. Nerves at the top The long-term plan is for China to wean itself off its reliance on exports and investment projects such as roads, railways and overpriced property developments, and for domestic consumption of goods and services to play a much bigger role in fuelling growth. But this rebalancing will be a long, hard slog. Officials do not want shock therapy because it could threaten the jobs of many of the 160m migrants who come from the countryside to provide the cheap labour behind China's exports. This economic quandary has become more acute at what is a delicate political moment for the Communist Party. Later this year (probably in October or November), the party will hold its five-yearly Congress, the 18th since its founding in 1921, at which sweeping changes in the country's top leadership will begin to unfold. The Congress will “elect” a new 300-member central committee (in fact it will be hand-picked by senior leaders). This will immediately meet to rubber-stamp the appointment of a new Politburo, a body that currently has 25 members. All but two of the Politburo's nine-member inner circle, the Politburo Standing Committee, will be replaced. Two appointments are all but certain: Vice-president Xi Jinping to take over from President Hu Jintao (as party chief after the Congress and as president next March); and Li Keqiang to replace his boss, the prime minister, Wen Jiabao, also next March. There will be much jockeying for the other slots. It is a decade since China experienced a leadership changeover on this scale—and the first time since the late 1980s that the advent of a new generation of leaders has coincided with such a troubled patch for the economy. The previous time, in 1988, an outbreak of inflation threw Deng Xiaoping's succession plans into disarray, giving conservatives ammunition with which to attack his liberal protégés. The party's strife erupted into the open the following year as students demanding greater freedom gathered in Tiananmen Square. The threats to the party today are very different, but fear of large-scale unrest still haunts the leadership. The past decade has seen the emergence of a big middle class—nearly 40% of the urban population, as some Chinese scholars define it—and a huge migration from the countryside into the cities. The party takes no chances. Large numbers of plainclothes police are on permanent watch in and around Tiananmen Square. (Since 2008, visitors to the vast plaza have had to undergo airport-type scanning and searches.) Early last year, when anonymous calls began circulating on the internet for citizens to gather in central Beijing in sympathy with the uprisings that were breaking out in the Arab world, the location specified was not Tiananmen but Wangfujing, a shopping street nearby. The police responded by flooding that area with officers too.

#### Social unrest threatens Chinese rule now – Clean coal is key to social benefits, equality, environmental legitimacy, and perception of prosperity

David Wendt, co-founded the Jackson Hole Center for Global Affairs in 2002 and has ¶ been its president since that time, leader in a U.S. bicentennial program on global interdependence at the World ¶ Affairs Council of Philadelphia (1975-77); a program on global health, population, and ¶ environmental issues at the Center for Strategic and International Studies, in ¶ Washington, D.C. (1977-98); and the international program of Idaho State University, in ¶ Pocatello, Idaho (1998-2006), 8-08, [“CLEAN COAL: ¶ U.S.-CHINA COOPERATION ¶ IN ENERGY SECURITY,” EastWest Institute, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?ots591=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&lng=en&id=104337>] E. Liu

A very different approach toward the pricing of environmental externalities will ¶ be needed if China is to mount a successful national energy security strategy ¶ based on clean coal. The key to such a strategy will be China’s capacity to set ¶ energy prices at levels that will encourage the greater conservation of energy ¶ and the more rigorous enforcement of environmental standards. The ¶ government, of course, is reluctant to impose these burdens at a time when it ¶ has based much of its legitimacy on the promise of universal access to a ¶ middle class lifestyle. ¶ ¶ 5 ¶ ¶ The problem is that rising social unrest throughout China already threatens the ¶ legitimacy of the regime. Much of this unrest relates to protests over conditions ¶ of environmental abuse and neglect. There is little point in a policy of ¶ continued subsidization of urban energy consumers when this can only ¶ perpetuate these conditions by adding to resource scarcities that will increase ¶ pressures on the environment. In other words, if energy security is a national ¶ security concern for China, so, too, is rising social unrest. And from a national ¶ security perspective, there is no real conflict between the requirements of ¶ energy security and the requirements of social peace. The same sacrifices ¶ that are needed to enhance energy security—higher energy prices and greater ¶ resource conservation—can also, in the long run, help to promote social ¶ stability by reducing the pressure on the environment. The appeal to patriotism ¶ offers the Chinese government a way to achieve these gains by demanding ¶ sacrifices of the Chinese people without having to put its own legitimacy on the ¶ line—and, in fact, while enhancing it. ¶ ¶ IMPLICATIONS OF A CLEAN COAL STRATEGY FOR CHINA ¶ ¶ Social and Political Stability ¶ ¶ A national energy security strategy based on clean coal has implications for ¶ social and political stability in China, especially concerning widening economic ¶ disparities between the richer coastal regions and the poorer regions of the ¶ interior. A national energy security strategy based on clean coal would provide ¶ an opportunity to address this imbalance, which now poses a greater threat to ¶ social and political stability than any other single issue in China. ¶ ¶ Specifically, a national energy security strategy based on clean coal demands ¶ will likely require a significant reallocation of resources from the energy-¶ consuming eastern regions of China to its coal-producing regions in the west. ¶ Such a strategy would entail large-scale investments in research and ¶ development (e.g., gasification technologies, hydrogen production), human ¶ resources (e.g., managerial and technical expertise), and physical facilities ¶ (pipelines and transmission lines)—all of which could create millions of new ¶ jobs. Accelerated development of the interior regions could lead to increased ¶ public revenues to pay for expanded social services and other public goods ¶ such as education and health, thereby elevating the quality of life of the ¶ average citizen. Enhanced environmental quality would also be possible by ¶ virtue of increased public revenues to pay for environmental externalities. ¶ ¶ In all of these respects, investment in a national clean coal infrastructure ¶ would amount to a large-scale public works program, helping to close the ¶ 6 ¶ ¶ ¶ growing gap between the richer coastal and the poorer interior regions of the ¶ country. The pay-off for the coastal regions would be the prospect of cleaner ¶ and more secure sources of electric power and, ultimately, coal-based ¶ transportation fuel supplied from the interior—a prospect that has thus far ¶ proven elusive. By bringing these win-win benefits to both the east and the ¶ west of China, a national energy security strategy based on clean coal could, ¶ in the most optimistic scenario, link the two regions more closely not only in ¶ terms of a shared energy future but also of shared perceptions of economic ¶ prosperity.

#### Growth is key to China stability and new programs to ensure it are necessary to prevent rapid and probable leadership collapse

Wing Thye Woo, Nonresident Senior Fellow in the Global. Economy and Development and Foreign Policy programs at. Brookings Institution, New Century Chair in. International Trade and Economicsm, has advised the U.S. Treasury Department, the IMF, World Bank and the United Nations, Professor, Department of Economics, University of California at Davis¶ Director, East Asia Program, Center for Globalisation and Sustainable Development, Columbia University, 11, [“China's economic growth engine: ¶ The likely types of hardware failure, ¶ software failure and power supply failure ,” BOFIT- Institute for Economies in Transition ¶ Bank of Finland, <http://www.suomenpankki.fi/pdf/168606.pdf>] E. Liu

What is the origin of the CPC‟s decision to change its primary focus from "economic con-¶ struction" to "social harmony"? And why include a target date of 2020? I believe that this switch in ¶ emphasis from "economic construction" to "social harmony" occurs because the Hu-Wen leadership ¶ is well aware that the political legitimacy of CPC rule rests largely on maintaining, one, an eco-¶ nomic growth rate that is high enough to keep unemployment low, and, two, a growth pattern that ¶ diffuses the additional income widely enough. Specifically, the Hu –Wen leadership recognises ¶ that without accelerated institutional reforms and new major policy initiatives on a broad front, the ¶ 1978-2005 policy framework, which had produced an average annual GDP growth rate of almost 10 ¶ percent, is at odds with environmental sustainability and with international concerns about China‟s ¶ persistent trade imbalances. More importantly, unless their new policies could produce significant ¶ improvements in social harmony by 2020, social instability would reduce China's economic growth, ¶ hence, making the leadership of CPC in Chinese politics unsustainable. ¶ To return to the analogy of China's economy being like a speeding car, the Hu-Wen leader-¶ ship saw that car could crash in the near future because there were several high-probability failures ¶ that might occur and cause an economic collapse. To be specific that there are three classes of fail-¶ ures that could occur hardware failure; software failure; and power supply failure.

#### Perception of social instability alone causes the CCP to wag the dog.

**Slaughter**, 12/15/**2008** (Anne-Marie – dean of the Woodrow Wilson School of Public and International Affairs, Newsweek, p. Lexis-Nexis)

Chinese citizens today no longer enjoy the old "iron rice bowl" (a guaranteed lifetime job), but in its place they've been promised golden chopsticks: a steadily rising standard of living. Should unemployment keep growing and wages stagnate, however, workers and peasants could take to the streets--as taxi drivers did in three Chinese cities last month. More instability could deter foreign investment in China, slowing the economy still further. If that happens, the Chinese government might decide to distract the population by trying to shift its attention to a foreign scapegoat, whipping up a nationalist response. That's a prospect that should worry everyone. This scenario may seem farfetched. After all, economists debate whether 8 percent growth really is the magic number, and unemployment needn't automatically translate into unrest. Still, Beijing itself is clearly concerned. The chairman of the National Development and Reform Commission warned in late November that "excessive production cuts and closure of businesses will cause massive unemployment, which will lead to instability." And President Hu Jintao himself recently described China as "under growing tension" both from the global financial crisis and "from its large population, limited resources and environmental problems." Remember, too, that the Chinese government is professionally paranoid, and has waved the nationalist flag in the past to distract the population from other crises. Moreover, the Chinese population often needs little coaxing. China's younger generation is proud, but also prickly. Public anger simmers close to the surface and can easily explode in violent riots, as it did after the United States accidentally bombed the Chinese Embassy in Belgrade during the Kosovo war, or after Japan's prime minister repeatedly visited a controversial World War II cemetery. Today the Chinese public is primed to respond to provocations quickly, thanks to widely circulated stories blaming the U.S. economic collapse for the closing of Chinese factories. Since the financial crisis struck, Beijing has been much more restrained about blaming the United States than some other foreign governments, especially Russia's, have been. But if conditions continue to deteriorate, China's leaders could change their tune.

#### They’ll lash out against the US, Taiwan or Japan in a domestic crisis

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By sustaining high rates of economic growth, China’s leaders create¶ new jobs and limit the number of unemployed workers who might go to¶ the barricades. Binding the public to the Party through nationalism also¶ helps preempt opposition. The trick is to find a foreign policy approach¶ that can achieve both these vital objectives simultaneously.¶ How long can it last?¶ Viewed objectively, China’s communist regime looks surprisingly resil-¶ ient. It may be capable of surviving for years to come so long as the economy¶ continues to grow and create jobs. Survey research in Beijing shows wide-¶ spread support (over 80 percent) for the political system as a whole linked¶ to sentiments of nationalism and acceptance of the CCP’s argument about¶ “stability first.”97 Without making any fundamental changes in the CCP-¶ dominated political system—leaders from time to time have toyed with¶ reform ideas such as local elections but in each instance have backed¶ away for fear of losing control—the Party has bought itself time. As scholar¶ Pei Minxin notes, the ability of communist regimes to use their patronage¶ and coercion to hold on to power gives them little incentive to give up¶ any of that power by introducing gradual democratization from above.¶ Typically, only when communist systems implode do their political fun-¶ damentals change.98¶ As China’s leaders well know, the greatest political risk lying ahead of¶ them is the possibility of an economic crash that throws millions of workers¶ out of their jobs or sends millions of depositors to withdraw their savings¶ from the shaky banking system. A massive environmental or public health¶ disaster also could trigger regime collapse, especially if people’s lives are¶ endangered by a media cover-up imposed by Party authorities. Nationwide¶ rebellion becomes a real possibility when large numbers of people are up-¶ set about the same issue at the same time. Another dangerous scenario is a¶ domestic or international crisis in which the CCP leaders feel compelled¶ to lash out against Japan, Taiwan, or the United States because from their¶ point of view not lashing out might endanger Party rule.

#### Sino-Japan war draws in the US and causes regional nuclearization

Richard Samuels, IR prof at MIT, 99, The U.S. Japan Alliance: Past, Present, and Future, p. 6-7

The same forces that lead China and Japan into an adversarial relationship in the first place might well push them to the brink of war. From a U.S. perspective, this would be disastrous, for several reasons: -War between two of America's largest trading partners would be devastating to the U.S. economy -U.S. involvement would be difficult to avoid in a war between a former ally and a former enemy -War between a nuclear power and a threshold nuclear power would push the envelope in new and disconcerting ways -War between the two would be (another) humanitarian disaster -Nuclearization in Japan would press both Koreas to do the same, and perhaps pressure other Asian nations to follow suite. Even if China and Japan did not go to war, a Cold War between the two great powers could impose high costs on the region, and indeed the globe, if the last simmering conflict between two giants on the world scene has taught us anything. At a minimum, the remarkable (and hard-earned) domestic politics stability in Japan would further unravel, creating even greater uncertainties for its foreign policy and its evolving role as provider of global public goods.

#### China war escalates and goes nuclear

Lee J. Hunkovic **--** professor at American Military University, 09, [“The Chinese-Taiwanese Conflict Possible Futures of a Confrontation between China, Taiwan and the United States of America”, American Military University, p.54]

A war between China, Taiwan and the United States has the potential to escalate into a nuclear conflict and a third world war, therefore, many countries other than the primary actors could be affected by such a conflict, including Japan, both Koreas, Russia, Australia, India and Great Britain, if they were drawn into the war, as well as all other countries in the world that participate in the global economy, in which the United States and China are the two most dominant members. If China were able to successfully annex Taiwan, the possibility exists that they could then plan to attack Japan and begin a policy of aggressive expansionism in East and Southeast Asia, as well as the Pacific and even into India, which could in turn create an international standoff and deployment of military forces to contain the threat. In any case, if China and the United States engage in a full-scale conflict, there are few countries in the world that will not be economically and/or militarily affected by it. However, China, Taiwan and United States are the primary actors in this scenario, whose actions will determine its eventual outcome, therefore, other countries will not be considered in this study.

## China Stuff

### Chinese Economy Dependent on Global

#### China’s openness make it highly dependent on the global economy

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In a 2006 report, the Department of Energy stated that Chinese pur-¶ chases of international energy assets were “economically neutral” and not¶ damaging to the United States, despite the anxieties of some members of¶ Congress about them. On the positive side, it noted that Chinese invest-¶ ments in developing new fields “may actually enlarge the total global oil¶ supply.”55 China is paying a premium for these assets because current¶ prices of oil and gas and other commodities are high. If prices drop, as¶ they could eventually as a result of a slowdown in demand in China or¶ elsewhere, China would suffer major losses just as Japan did after over-¶ paying for international assets during its boom in the 1970s.¶ Interdependence¶ As a large country with an unusually high degree of openness to the world¶ economy—foreign trade is 75 percent of its GDP56—China depends on¶ other countries for its domestic prosperity and stability. It is highly vul-¶ nerable to shocks from the international economy—or from the political¶ reactions to China’s rise. If a backlash against China were to shut it out of¶ key markets like the United States, Europe, or Japan, economic growth¶ would slow and domestic unemployment could rise to dangerous levels.¶ China is the target of more antidumping investigations (that accuse Chi-¶ nese producers of selling their goods abroad at unfairly low prices) than¶ any other country.57 Seeking to head off adverse reactions that could dis-¶ rupt foreign trade and investment, Chinese foreign policy makers take a¶ cautious and accommodating stance toward most countries.¶ Other countries are, in turn, careful not to trip up China’s growth. As¶ Singaporean journalist Janadas Devan observes, “China has become too¶ essential a part of the global economy for any state to contemplate a con-¶ frontation with it with equanimity.”58

### Cooperation Good – Economy

#### Even a US-China cold war collapses the economy

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Even if the two sides manage to avoid a shooting war, a cold war with¶ China would wreak havoc in the United States and throughout the world.¶ The two countries have become economically dependent on one another.¶ The United States is China’s largest export market (buying approximately¶ 20 percent of its total exports) and China loans most of the dollars it earns¶ from trade to the U.S. government, which uses the money to cover its¶ large budget deficits. If Washington imposed economic sanctions on China¶ and China retaliated by selling off some of the billions of dollars of Ameri-¶ can government debt it owns, American interest rates would shoot up,¶ our economy would slow to a crawl, and a global recession could result. A¶ hostile relationship with China would also make it impossible for our two¶ countries to work together on the many global issues that affect the people¶ of both countries, such as AIDS, avian flu epidemics, global warming,¶ and terrorism.

### Growth Key – Lashout

#### Domestic crisis from various causes results in China lash out internationally

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By sustaining high rates of economic growth, China’s leaders create¶ new jobs and limit the number of unemployed workers who might go to¶ the barricades. Binding the public to the Party through nationalism also¶ helps preempt opposition. The trick is to find a foreign policy approach¶ that can achieve both these vital objectives simultaneously.¶ How long can it last?¶ Viewed objectively, China’s communist regime looks surprisingly resil-¶ ient. It may be capable of surviving for years to come so long as the economy¶ continues to grow and create jobs. Survey research in Beijing shows wide-¶ spread support (over 80 percent) for the political system as a whole linked¶ to sentiments of nationalism and acceptance of the CCP’s argument about¶ “stability first.”97 Without making any fundamental changes in the CCP-¶ dominated political system—leaders from time to time have toyed with¶ reform ideas such as local elections but in each instance have backed¶ away for fear of losing control—the Party has bought itself time. As scholar¶ Pei Minxin notes, the ability of communist regimes to use their patronage¶ and coercion to hold on to power gives them little incentive to give up¶ any of that power by introducing gradual democratization from above.¶ Typically, only when communist systems implode do their political fun-¶ damentals change.98¶ As China’s leaders well know, the greatest political risk lying ahead of¶ them is the possibility of an economic crash that throws millions of workers¶ out of their jobs or sends millions of depositors to withdraw their savings¶ from the shaky banking system. A massive environmental or public health¶ disaster also could trigger regime collapse, especially if people’s lives are¶ endangered by a media cover-up imposed by Party authorities. Nationwide¶ rebellion becomes a real possibility when large numbers of people are up-¶ set about the same issue at the same time. Another dangerous scenario is a¶ domestic or international crisis in which the CCP leaders feel compelled¶ to lash out against Japan, Taiwan, or the United States because from their¶ point of view not lashing out might endanger Party rule.

### Lashout Likely

#### Domestic troubles causes lashout and war – Hardline opinions make it likely

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The Chinese system lacks effective checks and balances to keep its lead-¶ ers from lashing out internationally to bolster themselves domestically.¶ During 2002 through 2004 I interviewed officials and journalists in some¶ of China’s most globalized regions, Guangdong, Shanghai, and Shandong,¶ searching for signs that provinces play as active a role in making foreign¶ policy as they do in economic policymaking. The interests of provincial¶ officials, as one Guangzhou journalist put it, “center on economic growth¶ to get tax revenue, create jobs, and keep stability.” Whenever domestic¶ unrest or international tension makes foreign investors uneasy, local offi-¶ cials invite them for tea and try to reassure them. Yet, except for narrowly¶ framed issues, like making it easier for Guangdong businesspeople to travel¶ back and forth to Hong Kong, provinces never get into the act of making¶ foreign policy. Nor do they necessarily favor a softer line. An informal¶ poll of provincial officials enrolled in a short-term course at the Central¶ Party School in 2001 found that they expressed surprisingly hard-line views¶ on relations with Japan and the United States. (One possible explanation¶ was offered by a scholar who said that the local officials “free ride on hard-¶ line nationalism” because it helps them get promoted but is “completely¶ disconnected from their local economic interests.”) Given the clout of¶ provincial officials in domestic policymaking, it will be important to track¶ how their foreign policy preferences and influence evolve as their local¶ economies become increasingly tied into global trade and investment.¶ Private business is the other group that has a strong stake in maintain-¶ ing international economic ties and avoiding military conflict. A senior¶ official responsible for Taiwan policy told me that a group of private busi-¶ ness executives met with him and urged him to start a dialogue with Tai-¶ wan because their businesses were being held back by the uncertainty in¶ the Strait. But private entrepreneurs do not yet have an institutional po-¶ litical voice. Jiang Zemin made a big push to allow private business people¶ to join the Communist Party—changing the social base of the CCP would¶ have broad ramifications for both domestic and foreign policy. But so far,¶ only one private businessperson serves as an alternate member of the CCP¶ Central Committee. A retired PLA general confided to me that he wor-¶ ries about the lack of a political counterweight to the nationalist public,¶ military, and intelligence agencies that might push China’s leaders into¶ military action.

### Limited Wars Coming Now

#### China intends to use limited conflicts over energy security now

Asia Times, 4-6-12, [“Small wars loom large on China's horizon,” Jens Kastner, Taipei-based journalist, http://www.atimes.com/atimes/China/ND06Ad02.html] E. Liu

TAIPEI - Broad hints have been coming out of China that the country might start small-scale military strikes over disputed waters that are believed to hold rich energy reserves. The consequences of such endeavors would be tolerable to Beijing, international experts say. Bitter territorial disputes China has with neighbors in the East and South China Seas have long grabbed media headlines. Virtually all countries in the region are involved in spats with China, from South Korea and Japan to the Philippines and Vietnam. In March alone, Beijing had verbal clashes with Seoul over a submerged rock; with Manila over the Philippines' plan to build a ferry pier; and with Hanoi over China's biggest offshore oil explorer's moves to develop oil and gas fields. But it wasn't only words: Vietnamese fishing boats were also seized by China and their crews detained. What all the disputed zones, islands and rocks have in common is that they actually are much nearer to the shores of the rival claimants than to China's. When strategists speak of the "Malacca Dilemma", they mean that Beijing's sea lines of communications are highly vulnerable. In times of conflict between the US and China, the supply of crude and iron ore needed to keep the Chinese economy alive and kicking could be relatively easily cut off in the straits that connect the Indian Ocean with the Pacific. As such, a move would force the Chinese leadership rather quickly to the negotiation tables on the enemy's terms - and as it becomes clearer that the western Pacific holds vast untapped reserves of oil and natural gas - Beijing naturally sees control over the areas as a way out of its precarious situation. (According to Chinese estimates, oil and gas reserves in the western Pacific could meet Chinese demand for more than 60 years.) With official defense spending to top US$100 billion in 2012, and the actual amount estimated to be much higher, China's People's Liberation Army (PLA) seems on course towards building the strength needed to ensure all goes smoothly in China's quest for energy security. New ballistic anti-ship missiles will make Washington think twice about ordering US forces into the region to come to their allies' rescue, as will a growing arsenal of land-based tactical aircraft and anti-ship cruise missiles, not to mention a fleet heavy on missile-firing warships and submarines. Making access to this part of the world even dicier for US forces, China's ongoing military modernization has also seen an easing of past detection, tracking and targeting problems for Chinese gunners. If Beijing is confident that Washington would not want to intervene, rival armed forces in the region could be taken on with J-15 fighters to be stationed on China's first aircraft carrier likely to be commissioned in August, a rapidly increasing number of naval destroyers, as well as brand-new amphibious landing ships and helicopter-carriers that can carry thousands of marines quickly to disputed islands. That the political will exists for such operations has been signaled more than once. In commentaries run in China's state media, most notably in the Global Times, the concept of "small-scale wars" has increasingly been propagated since 2011. In early March, Chinese Premier Wen Jiabao emphasized that the PLA needed to be better prepared to fight "local wars". Experts interviewed by Asia Times Online agreed that China would likely meet future objectives with limited military strikes.

### Magnifier – Land Claims – AT: International Law

#### Resource interests stokes disputes – Sovereignty and international law only inflames emotions

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This is not to suggest that the East China Sea would be free of¶ Sino-Japanese tensions if sovereignty over the Senkakus were not¶ such an important prize. The seas are narrow, and Japan and¶ China might well contest the proper location of the dividing line¶ between their EEZs even if the Senkakus sank into the sea.¶ Nevertheless, it seems reasonable to suggest that the tone of the¶ dispute would be much milder if physical land territory were not¶ at stake. Land is almost always seen as a core national interest and¶ has ready emotional appeal.5 6 It is sovereign territory, an actual part of the country that owns it. EEZs are not part of a country in¶ quite the same way, but are merely stretches of ocean and sea¶ bottom over which a particular country enjoys added privileges.157¶ Given that no postwar Chinese government took the least interest¶ in the islands until after the United Nations survey, the¶ sovereignty dispute might never even have arisen but for the¶ international law of offshore rights.¶ The timing of China's first protestations of sovereignty over the¶ Senkakus makes it highly implausible that their prime motivation¶ was anything other than a chance at the area's potential¶ hydrocarbon wealth.58 The structure of the international law of¶ the sea encouraged China to pursue this goal by deploying¶ symbolically rich and ideologically potent arguments about¶ sovereignty. Coupling the issue of sovereignty over the islands (a¶ mostly symbolic issue) with access to the East China Sea's energy¶ resources (an entirely pragmatic issue) has made it extremely¶ difficult to make progress on either.¶ Japan and China have proven their ability to work together on¶ economic matters.59 Japanese and Chinese oil companies have¶ admitted that they would like to cooperate in the East China Sea.160 Unfortunately, this spirit of cooperation has not extended to issues¶ touching on sovereignty and security. Neither government can¶ easily abandon or moderate its claim because a point of¶ sovereignty is a point of principle.161 ¶ A government risks¶ illegitimacy when it does not appear to be defending a nation's¶ territorial integrity and respect among its neighbors. Although¶ China has been willing to accept unfavorable boundary¶ agreements for the sake of overall relations with its other¶ neighbors, doing so will be particularly difficult in its dealings¶ with Japan, given the powerful strain of anti-Japanese nationalism¶ in Chinese political ideology.162 Japanese leaders are similarly¶ unwilling to appear weak in their defense of Japan's territorial¶ claims. Thus, so long as the international law of the sea ties a¶ pragmatic resource agreement to a perceived issue of principle, the¶ governments will have difficulty creating the mutually beneficial¶ arrangements, perhaps a Joint Development Zone (JDZ), upon¶ which friendlier powers might already have agreed.63

### Magnifier – Suspicion

#### Chinese concerns of self-reliance causes distrust of US hegemony and activities

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For a country which has traditionally placed a significant premium on self-¶ reliance and on limiting the encroachment of foreign companies and dependence ¶ on external powers, the strategic necessity to secure ever-increasing supplies of ¶ foreign oil is a source of vulnerability. The fact that the majority of China’s oil ¶ imports are transported through sea lines of communication (SLOCs) that are ¶ controlled by foreign navies, most notably that of the United States, fosters a sense ¶ of insecurity and a fear that these supplies could be threatened in the context of ¶ a conflict with the West. Similarly, the fact that the world’s greatest reserves are ¶ to be found in the Persian Gulf region, which is under the hegemonic control of ¶ the United States, adds to this sense of vulnerability. Meanwhile, the international ¶ activities of Chinese oil companies are treated with suspicion and circumspection ¶ by many external actors, most notably by western international oil companies, ¶ which view the close ties of these companies to the Chinese government and their ¶ access to state funds as undermining a ‘level playing field’ in terms of international ¶ investment opportunities. In countries such as Sudan, China’s commitment to a ¶ policy of non-intervention in other states’ political affairs has been threatened by ¶ the international campaign over perceived Chinese complicity in the Sudanese ¶ government’s repression of the Darfur rebellion. In Latin America and Africa, ¶ the Chinese government’s claims of altruistic South–South development have ¶ been increasingly challenged by local criticisms that its resource-focused activities ¶ replicate the pattern of neo-imperialist domination which characterized earlier ¶ European interventions.

### Nationalism Outweighs – Taiwan

#### China would go to war over Taiwan – State survival and legitimacy depends on it

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Taiwan is an issue that arouses intense nationalist emotions in China.¶ The Japanese colonized the island from 1895 to 1945 when China was too¶ weak to resist, during a period that the People’s Republic of China (PRC)¶ school textbooks describe as China’s “century of humiliation.” Ever since¶ 1949, when the Chinese civil war ended with a Communist victory and¶ the defeated Guomindang retreated to Taiwan, Chinese schoolchildren¶ have been taught that the century of humiliation would finally end only¶ when Taiwan was reunified with the Mainland.¶ It is widely believed in China and abroad that if the Communist re-¶ gime allows Taiwan to declare formal independence without putting up a¶ fight, the outraged public will bring down the regime. China’s military¶ and political leaders know full well that the United States, while not le-¶ gally bound to intervene, has committed morally and politically to help¶ Taiwan defend itself. They also realize that China’s booming economy¶ would be the first casualty in any military conflict with Taiwan and the¶ United States. Nevertheless, they would use force to avoid domestic hu-¶ miliation if they believed their political survival depended on it.

### Unemployment Causes Unrest

#### Massive demands for labor are coming now – Failure to accommodate causes labor unrest

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Chinese Communist Party leaders are acutely aware that they are losing¶ their grip on Chinese society as it is roiled by industrialization and urban-¶ ization of epoch-making proportions. In the past, a person’s destiny de-¶ pended on where he or she happened to be born, city or countryside.¶ Strict household registration rules locked people permanently into their¶ place of origin. The children of farming families—except for the few who¶ made it to university or the army—were stuck in the countryside forever.¶ Nowadays, however, tens of millions of Chinese are on the move in a¶ historic exodus from countryside to city. Of the five hundred million ru-¶ ral labor force only one hundred million still work as farmers. Forty mil-¶ lion farmers have lost their land to rural industrialization.78 One hundred¶ thirty million rural dwellers—the equivalent of one-half of the American¶ population—have migrated to cities to find work and now constitute the¶ main industrial workforce.79 China’s urban population has grown from 20¶ percent to 40 percent of the total and Chinese planners anticipate it grow-¶ ing to 55 to 60 percent by 2020.80¶ Within cities, the “iron rice bowl” of permanent employment in state¶ enterprises has been shattered. Previously, the government assigned people¶ to jobs that they held until retirement whether they liked them or not.¶ Workers lived together in factory housing under the watchful eye of Party¶ members. Today people find their own jobs, and four-fifths of them own¶ their own apartments.81 Three-quarters of urban employees work outside¶ the state sector in private, collective, or foreign businesses where political¶ controls are minimal.82¶ Beginning in the mid-1990s, the government stopped propping up many¶ of the state factories that couldn’t withstand market competition and let¶ them go out of business. As the factories closed their doors, they spilled 65¶ million unemployed workers out on the street (1995–2001) and sparked¶ widespread labor unrest.83 China’s official unemployment rate in 2004¶ was 4.2 percent.84 But actual unemployment is much higher, reaching¶ double-digit levels in some heavy industrial cities in the northeastern rust¶ belt (the region historically known as Manchuria).85 Millions more new¶ workers enter the workforce every year searching for jobs. In 2006 the job-¶ seeking public includes 4 million college graduates, 2.7 million graduates¶ from vocational schools, 2.1 million graduates of secondary schools, 700,000¶ ex-soldiers, 2.6 million rural-urban migrants, 1 million laid-off workers,¶ and 8.4 million urban unemployed.86 Job creation is a political impera-¶ tive. Former vice president of the CCP Party School Zheng Bijian pro-¶ jected that from 2006 to 2015 twenty-four million new jobs will have to be¶ created in the cities each year. “The employment pressure will be tre-¶ mendous,” he said. “China’s GDP must grow at a rate no slower than 7¶ percent annually if only to meet job creation needs.”87¶ Particularly worrisome from the standpoint of political stability is the¶ new phenomenon of unemployed college graduates. These are the indi-¶ viduals who would be capable of organizing and leading opposition move-¶ ments. College enrollments have increased severalfold—from less than 1¶ million in 1978 to 11 million in 200388—and many graduates are unable to¶ find acceptable jobs. At several new privately operated colleges, students¶ have demonstrated in large numbers when they discovered that their di-¶ plomas would have less value than school authorities had promised.89 In-¶ creasing proportions of the hundreds of thousands of students who studied¶ abroad are starting to return to China.90 Although this trend is an encour-¶ aging sign that China’s best and brightest have confidence in their country’s¶ future, it also makes for a tighter market for highly educated labor. The¶ Ministry of Education expected that 25 percent of the 3.38 million stu-¶ dents who graduated in 2005 would be unable to find jobs.91

### Unrest Likely

#### China’s internally fragile – Uprisings are likely that collapse the regime

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China’s growing economic might makes its leaders appear to loom over¶ us like ten-feet-tall giants. But their self-image differs vastly. Dogged by¶ the specters of Mao Zedong and Deng Xiaoping, the revered leaders who¶ preceded them, China’s current leaders feel like midgets, struggling des-¶ perately to stay on top of a society roiled by economic change.¶ China is stronger economically and more secure internationally than¶ it has been since the nineteenth century, but paradoxically, its commu-¶ nist leaders have a deep sense of domestic insecurity. China may be an¶ emerging superpower, but it is a fragile one. And it is China’s internal¶ fragility, not its economic or military strength, that presents the greatest¶ danger to us. Unless the United States begins to understand the fears that¶ motivate China’s leaders, we face the possibility of conflict with it.¶ Like all politicians, China’s leaders are concerned first and foremost¶ with their own political survival. They don’t have to stand for election,¶ but they face other political risks that democratic leaders do not have to¶ worry about. A rival leader could try to oust them. A mass protest move-¶ ment could rise up and overthrow them. If China’s leaders were to lose¶ the support of the military, an opposition movement could defeat them.¶ And unlike in a democracy, the price of political defeat to China’s leaders¶ could be crushing. Political defeat could cost them and their families¶ their livelihoods or even their lives.¶ Chinese leaders are haunted by the fear that their days in power are¶ numbered. They watched with foreboding as communist governments in¶ the Soviet Union and Eastern Europe collapsed almost overnight begin-¶ ning in 1989, the same year in which massive prodemocracy protests in¶ Beijing’s Tiananmen Square and more than one hundred other cities¶ nearly toppled communist rule in China. Jiang Zemin, who led China¶ during the 1990s after Tiananmen, and Hu Jintao, the current leader,¶ know that they lack the personal prestige of Mao Zedong and Deng¶ Xiaoping, who founded the People’s Republic of China in 1949. They¶ also recognize that two decades of economic reform and opening to the¶ world have transformed Chinese society radically and created latent po-¶ litical challenges to communist rule. During his second inaugural address,¶ President Bush spoke about expanding freedom across the world—and¶ placed every authoritarian regime on notice. China’s leaders could not¶ have failed to take this message personally.¶ The worst nightmare of China’s leaders is a national protest movement¶ of discontented groups—unemployed workers, hard-pressed farmers, and¶ students—united against the regime by the shared fervor of nationalism.¶ Chinese history gives them good reason to worry. The two previous dy-¶ nasties fell to nationalist revolutionary movements. Mass movements that¶ accused leaders of failing to defend the nation against foreign aggression¶ brought down the Qing Dynasty in 1911 and the Republic of China in¶ 1949. No wonder China’s current leaders are obsessed with the fear that¶ the People’s Republic of China could meet the same fate, and strive to¶ stay ahead of the wave of popular nationalism sweeping the country.¶ In 1989, the regime was shaken to its roots by nationwide student pro-¶ tests and divisions within the leadership over how to handle them. If the¶ military had refused to obey Deng Xiaoping’s command to forcibly im-¶ pose order or if it had split, the Chinese Communist Party might have¶ followed its Soviet counterpart into the dustbin of history.¶ After the close call in 1989, China’s leaders became fixated on what¶ they call “social stability.” They use that euphemism to convince the¶ Chinese public that Communist Party rule is essential for maintaining¶ order and prosperity, and that without it, a country as large as China would¶ descend into civil war and chaos. In their speeches, the leaders make no¶ secret of their anxieties about social unrest.

### War Coming Now – Energy Security

#### China’s energy dependence causes multiple flashpoints for dispute and war now

Michael Richardson, visiting senior research fellow at the Institute of South East Asian Studies in Singapore, 6-7-12, [“Thirst for energy driving China's foreign policy,” Japan Times, <http://www.japantimes.co.jp/text/eo20120607mr.html>] E. Liu

SINGAPORE — The United States and China, the world's top users of energy, are heading in opposite directions. It is a trend that has major geostrategic implications for the Asia-Pacific region. The U.S. is more certain that most of its future oil and gas will be produced at home. It is becoming less reliant on imported oil and natural gas as it ramps up domestic output and consumes fewer liquid fuels because of falling demand and energy saving advances, particularly in transport and industry. Meanwhile, China is becoming ever more dependent on oil and gas shipped or piped into the country, mainly from faraway sources of supply that are often in politically volatile parts of world, including the Middle East, Africa and Central Asia. As a result, Beijing's sense of insecurity about future energy supplies is rising. China is modernizing its armed forces not just to reclaim Taiwan by military means if necessary. China wants to protect its maritime trade routes and secure access to offshore energy, mineral and fisheries resources in nearby seas, including the East China Sea — where it faces conflicting claims to jurisdiction from Japan — and the South China Sea, where its claims to jurisdiction are contested by the Philippines, Vietnam, Malaysia, Taiwan, Indonesia and Brunei. China also wants to enhance its security by establishing an offshore zone of influence that it will be able dominate, instead of the U.S. and regional allies. Despite America's recently declared strategic "pivot" to Asia, its relative power and influence is declining. This is unlikely to change even if China's growth slows somewhat. As America gains energy security in a time of cost-cutting, it will have less incentive to continue expensive military protection of maritime supply lines in increasingly contested areas such as the seas off China's coast, the oil and gas-rich Persian Gulf, and around the Middle East and Africa, prompting China to extend its own military reach into the Indian Ocean, through which so much of its imported oil and gas comes. This will heighten tensions with India. Stephen Walt, a professor of international affairs at Harvard University's Kennedy School of Government has projected the outcome of U.S.-China economic, military and energy trends in this way: "If China is like all previous great powers, including the U.S., its definition of 'vital' interests will grow as its power increases — and it will try to use its growing muscle to protect an expanding sphere of influence. "Given its dependence on raw-material imports (especially energy) and export-led growth, prudent Chinese leaders will want to make sure that no one is in a position to deny them access to the resources and markets on which their future prosperity and political stability depend. "This situation will encourage Beijing to challenge the current U.S. role in Asia. Over time, Beijing will try to convince other Asian states to abandon ties with America, and Washington will almost certainly resist these efforts. An intense security competition will follow." The most recent sign of this regional struggle for supremacy is in the South China Sea where China and the Philippines, an ally of the U.S., have been at loggerheads for nearly two months over ownership and control of Scarborough Shoal, a reef and fishing ground that is far closer to the Philippines than to China. Such disputes can be contained. Or they can lead to China prevailing over weaker, less determined opponents. Or they can result in armed conflict. If the U.S. or its ally Japan became involved, there could be a wider war that would destabilize Asia. Is there a way for China to emulate the U.S. and become substantially less dependent on foreign oil and gas? Until 1993, China produced enough crude oil to meet its needs. But as growth surged, oil imports rose. China now imports 55 percent of its oil consumption, a ratio that is set to increase. Natural gas, the least polluting of fossil fuels, is on a similar trend line. By 2020, China's gas imports by pipeline and sea will make up nearly 33 percent of demand, up from around 20 percent now and none in early 2006, when China cease to be self-sufficient in gas.

### War Likely

#### China war is likely – Flashpoints and 1996

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I dash to my car and speed back to the State Department, using the¶ moments of calm before entering the storm of the crisis to make a plan.¶ What should our government do to prevent the accident from triggering a¶ war between China and Taiwan—and very likely drawing in the United¶ States?¶ I play through the various scenarios, and they all have one common¶ thread. If CNN is broadcasting the news of the crash, it is sure to be picked¶ up and spread by the Internet in China before the Communist Party censors\¶ can block it out. And once the news is public, China’s leaders will feel¶ compelled by the pressure of public opinion to react forcefully.¶ A forceful reaction is not beyond the pale. Flashpoints for military¶ clashes between China and the United States have multiplied in recent¶ years. And although most Americans have forgotten, China and the United¶ States came to the brink of war in 1996. The Chinese launched massive¶ military exercises and shot missiles into the waters outside Taiwan’s ports¶ to demonstrate their fury at our allowing Taiwan’s president to visit the¶ United States for the first time since we derecognized Taiwan and estab-¶ lished diplomatic relations with the People’s Republic of China in 1979.¶ Envisioning the scenario as it unfolds, when I reach my office in the¶ State Department, I learn that President Hu Jintao has already appeared¶ on China Central Television:¶ “My fellow countrymen, earlier today a Taiwan air force plane flew across¶ the midline of the Taiwan Strait, veering into a People’s Liberation Army air¶ force jet and causing it to crash into the sea, killing its brave pilot. This fla-¶ grant and barbarous act was a deliberate provocation by the Taiwan authori-¶ ties to provoke antagonism across the Taiwan Strait and undermine the status¶ quo. The Mainland and Taiwan belong to one and the same China.”¶ Following the pattern of previous crises, the Chinese leaders have imme-¶ diately framed the situation as an intentional attack on China and boxed¶ themselves into a corner. Now how will they prove their determination to¶ defend the national honor against this “deliberate provocation”?

### War Likely in Status Quo

#### War is the most likely outcome in the squo – Power transitions and differing culture

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Unless we understand the fears that drive China’s leaders’ international¶ behavior and craft our own policies accordingly, the historical odds pre-¶ dict war, not peace. The most notable exception to the rule that rising¶ powers cause war occurred when the United States surpassed Britain in¶ the late nineteenth century. The two were able to avoid war in large part¶ because they shared the same values and culture, something that cannot¶ be said of democratic America and communist China.¶ As China grows richer, it builds its military strength. China fits the¶ classical pattern of a rising power described by historian Paul Kennedy.¶ “Wealth is usually needed to underpin military power, and military power¶ is usually needed to acquire and protect wealth.”8¶ Since 1989, Chinese defense spending has grown at double-digit an-¶ nual rates. The pace of military modernization accelerated during the¶ 1990s in response to moves by Taiwan’s leaders to establish the island as¶ an independent sovereign country instead of a part of China. Estimates of¶ the size of China’s military spending vary widely because much of that¶ spending is off-budget. Estimates range from a high of $80 to 90 billion¶ (Department of Defense and the CIA)9 to $40 billion (International Insti-¶ tute for Strategic Studies)10 and $31 to 38 billion (the RAND Corpora-¶ tion).11 For comparison, the United States spent $518 billion (2004); Russia¶ spent $65 billion; Japan, $43 billion; and the United Kingdom, $38 bil-¶ lion (2003).12 Chinese military experts claim they will have a modern force¶ capable of defeating Taiwan and countering American intervention by¶ the second half of this decade.

### Terminal – Hunkovich

#### China war escalates and goes nuclear

Lee J. Hunkovic **--** professor at American Military University, 09, [“The Chinese-Taiwanese Conflict Possible Futures of a Confrontation between China, Taiwan and the United States of America”, American Military University, p.54]

A war between China, Taiwan and the United States has the potential to escalate into a nuclear conflict and a third world war, therefore, many countries other than the primary actors could be affected by such a conflict, including Japan, both Koreas, Russia, Australia, India and Great Britain, if they were drawn into the war, as well as all other countries in the world that participate in the global economy, in which the United States and China are the two most dominant members. If China were able to successfully annex Taiwan, the possibility exists that they could then plan to attack Japan and begin a policy of aggressive expansionism in East and Southeast Asia, as well as the Pacific and even into India, which could in turn create an international standoff and deployment of military forces to contain the threat. In any case, if China and the United States engage in a full-scale conflict, there are few countries in the world that will not be economically and/or militarily affected by it. However, China, Taiwan and United States are the primary actors in this scenario, whose actions will determine its eventual outcome, therefore, other countries will not be considered in this study.

### Terminal Extension – Probability and Timeframe

#### Conflicts with China cause global war that quickly goes nuclear

Jianyang Hu, faculty of Economics, University of Cambridge, UK, 1-12, [“How to Integrate China Into the International Community: US-China Relations Under Power Transition in the 21st Century,” Journal of US-China Public Administration, ISSN 1548-6591 January 2012, Vol. 9, No. 1, 81-89, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2012134>] E. Liu

Nevertheless, there are several potential conflicts that might trigger regional or even global warfare. With the rising Chinese power, China is restoring its historical status and on the way to resolve its territory issues. However, the process is contained by the US foreign policy toward China. Although the Obama Administration declared strategic cooperation with China on some global affairs in his last visit to China in 200917, US is still adopting de facto policy of continental realism and containment18. China is right now locked in a U-shape envelop by the US military forces. Since the Cold War, China is firmly contained by the Geographic Boundaries of the First and Second Island Chains, which makes China a semi-inland country (Holmes, Yoshihara, & McCaffrie, 2007). After the collapse of Soviet Union, US however does not change its security policy in the West Pacific, and China is even more heavily contained because US is now moving its forces in the European military bases to the West Pacific19. Right now, it is the region that has the densest military bases in the world, where there are all kinds of mass destruction weapons including nuclear weapons, nuclear aircrafts, bomb carriers, nuclear submarines and missiles, etc. China’s most prosperous coastal regions are within half-hour attack by the US military forces20. On the other hand, China is the largest trading and manufacturing country in the world, which heavily relies on the import of raw materials from the India Ocean and Pacific Ocean. Hence, US military forces in the region are now threatening Chinese trade life line that goes through the Strait of Malacca, South China Sea and Taiwan Strait. Two important issues worth mentioning in the West Pacific are the Taiwan Issue and South China Sea Issue. Taiwan is an inseparable part of China, although it is not under the direct control of the mainland right now. In June 2010, Gates reinforced that the US would sell sophisticated weapons to Taiwan regardless of the bilateral relation and cross-strait relation21. Actually, this argument is a reflection of the rigid Cold-War stance toward the Taiwan Issue. It has hurt the bilateral relation badly and retards the current peaceful trend toward reunification under Ma Ying-jeou’s administration. Note that current US-China relation goes beyond a simple bilateral relation. Therefore, the distrust made by any improper measures on sensitive issues will have a global adverse impact. In the South China Sea, US is intensively spying in this region22, and Clinton just suggested to internationalize the territory conflicts in the region after the latest ASEAN (Association of Southeast Asian Nations) talk23. It hurts China’s vital interest and sovereignty integrity in the same way as the Taiwan Issue. According to the spiral model, it is leading to the imbalance of regional military powers and a vicious cycle of arms race.

## Cooperation

### Top Level

#### US investment in CCS is key to collaboration with China – Solves resource wars, environment and social unrest

David Wendt, co-founded the Jackson Hole Center for Global Affairs in 2002 and has ¶ been its president since that time, leader in a U.S. bicentennial program on global interdependence at the World ¶ Affairs Council of Philadelphia (1975-77); a program on global health, population, and ¶ environmental issues at the Center for Strategic and International Studies, in ¶ Washington, D.C. (1977-98); and the international program of Idaho State University, in ¶ Pocatello, Idaho (1998-2006), 8-08, [“CLEAN COAL: ¶ U.S.-CHINA COOPERATION ¶ IN ENERGY SECURITY,” EastWest Institute, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?ots591=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&lng=en&id=104337>] E. Liu

Given the proper circumstances and choices, therefore, an energy security ¶ strategy based on domestic coal supplies could go a long way to helping both ¶ the United States and China insulate themselves somewhat from the ¶ worldwide scramble for oil and natural gas. In itself, however, such a strategy ¶ may not go far enough. Indeed, if pursued in mutual isolation, such a strategy ¶ promises only conflict in another form. ¶ ¶ The reason is that, left to its own devices, each country will find itself facing ¶ sub-optimal range of energy choices, each of which can ultimately be pursued ¶ only at the expense of the planet. Accessing unconventional energy sources ¶ such as oil shale or tar sands or gasifying coal to produce liquid transportation ¶ fuel are very expensive processes that require very high energy inputs in ¶ relation to energy outputs. When the cost of addressing environmental ¶ 11 ¶ ¶ externalities like carbon controls is added, the cost of developing these ¶ sources becomes prohibitive. ¶ Faced with the mounting pressures of the search for secure sources of ¶ energy, it is extremely unlikely that either the United States or China would ¶ chose to pay the full cost of these environmental externalities as opposed to ¶ deferring them to future generations. Sooner or later, however, these costs will ¶ need to be confronted. Worsening climate change and a deteriorating global ¶ environment will lead to resource scarcities, cross-border pollution, and other ¶ pressures on natural and human resources that can only increase the potential ¶ for bilateral conflict. ¶ Pursued independently, therefore, energy security strategies based on clean ¶ coal are no more a prescription for avoiding conflict between the United States ¶ and China than a strategy of subsidizing urban consumers of energy is a ¶ prescription for avoiding social unrest in China. In both cases, it is the ¶ environment that stands in the way. A more feasible model for the pursuit of ¶ energy security based on clean coal may be for the United States and China ¶ to engage in a cooperative effort, each compensating for the other’s clean coal ¶ vulnerabilities by sharing technologies in its areas of comparative strength. ¶ CCS provides an obvious focus from the U.S. standpoint for such a strategy of ¶ clean coal technology exchange with China. Unlike China, the United States ¶ has many capabilities already in place for the full-scale development, ¶ demonstration, and deployment of CCS. These resources include world-class ¶ geological expertise, extensive experience in computer modeling, simulation ¶ and mathematical computation, and advanced capabilities in chemical process ¶ engineering and analysis. Even though, as we have seen, the United States ¶ has barely scratched the surface in terms of allocating these resources in the ¶ service of CCS, the lessons are there, waiting to be learned and shared with ¶ China. ¶ This disparity in resources and expertise relevant to CCS presents an ¶ opportunity for the United States to help China accelerate its own program of ¶ CCS demonstration, development, and deployment in the interests of peace ¶ as well as the future of the planet. Although China is probably now not ready ¶ for full CCS deployment, it cannot defer this option indefinitely as it ¶ contemplates future development of CTL and other coal-based transportation ¶ fuels (e.g., methanol) in addition to its current focus on advanced clean coal ¶ power generation. ¶ In the absence of accompanying measures for CCS, however, the prospect of ¶ China’s development of CTL presents extremely serious implications for the ¶ 12 ¶ ¶ global environment and, ultimately, U.S security. It is at least as much in the ¶ U.S.’s long term national security interests to prevent such an outcome as it is, ¶ for example, to forestall the prospect of a world-wide grab for oil. As Gen. ¶ Richard L. Lawson (USAF-ret.) has said with respect to CCS, “We need to ¶ develop it, test it, and take it over there [to China] and share it as our ¶ investment in peace in the second half of the twentieth century.”

### Chinese Social Stability Impact

#### Domestic instability in China causes Taiwan to move for independence, triggering a US/China war

**Klintworth 1994** (Gary – Former Senior Researcher at Northeast Asia Project, Australian Journal of International Affairs, November, p. 219)

China also has many problems, not least the degradation of its environment, population pressure, rising expectations, infrastructural bottlenecks, political factionalism, the Deng succession, a crisis of legitimacy for the Chinese Communist Party, the politics of corruption, regional disparities, a rising crime rate, the erosion of state authority and roving masses, numbering up to 130 million, of underemployed or dissatisfied peasants in several inland provinces.45 There are demands for independence by ethnic minorities in Tibet and Xinjiang. Given these considerations, it is by no means certain that the country will remain intact, and it may be premature, therefore, to talk about China as a great power that can dominate the neighboring region or project power and influence far from its physical borders.46 The breakup of China or at the very least a weak government in Beijing, might unleash fissiparous tendencies in China’s outer regions, including Taiwan and Hong Kong. This could trigger intervention by outside powers, such as Japan, the US, Britain and India that in turn, would provoke a strong military response from the PLA, if it was not meanwhile distracted trying to maintain law and order in the cities. The possibilities are endless and that is why, of the two alternatives, a disintegrating China poses the greatest risk to regional and global security.

### Chinese Social Stability Impact – Nationalism

#### Perception of social instability alone causes the CCP to wag the dog.

**Slaughter**, 12/15/**2008** (Anne-Marie – dean of the Woodrow Wilson School of Public and International Affairs, Newsweek, p. Lexis-Nexis)

Chinese citizens today no longer enjoy the old "iron rice bowl" (a guaranteed lifetime job), but in its place they've been promised golden chopsticks: a steadily rising standard of living. Should unemployment keep growing and wages stagnate, however, workers and peasants could take to the streets--as taxi drivers did in three Chinese cities last month. More instability could deter foreign investment in China, slowing the economy still further. If that happens, the Chinese government might decide to distract the population by trying to shift its attention to a foreign scapegoat, whipping up a nationalist response. That's a prospect that should worry everyone. This scenario may seem farfetched. After all, economists debate whether 8 percent growth really is the magic number, and unemployment needn't automatically translate into unrest. Still, Beijing itself is clearly concerned. The chairman of the National Development and Reform Commission warned in late November that "excessive production cuts and closure of businesses will cause massive unemployment, which will lead to instability." And President Hu Jintao himself recently described China as "under growing tension" both from the global financial crisis and "from its large population, limited resources and environmental problems." Remember, too, that the Chinese government is professionally paranoid, and has waved the nationalist flag in the past to distract the population from other crises. Moreover, the Chinese population often needs little coaxing. China's younger generation is proud, but also prickly. Public anger simmers close to the surface and can easily explode in violent riots, as it did after the United States accidentally bombed the Chinese Embassy in Belgrade during the Kosovo war, or after Japan's prime minister repeatedly visited a controversial World War II cemetery. Today the Chinese public is primed to respond to provocations quickly, thanks to widely circulated stories blaming the U.S. economic collapse for the closing of Chinese factories. Since the financial crisis struck, Beijing has been much more restrained about blaming the United States than some other foreign governments, especially Russia's, have been. But if conditions continue to deteriorate, China's leaders could change their tune.

#### Nationalism overwhelms constraints on nuclear war

**St. Louis Post-Dispatch**, July 25, **2005** (Bombs and Butter. St. Louis Post-Dispatch, p. Lexis-Nexis)

As China gains power, that nationalism becomes more worrisome. China's authoritarian government lacks the natural restraint of voters or of dissenters free to challenge government assumptions that can lead to war. The Pentagon recently reported that China is rapidly building its military with a goal of extending its influence across Asia. In the future, its leaders "may be tempted to resort to force or coercion more quickly to press diplomatic advantage, advance security interests or resolve disputes," the report concluded. If more muscle combined with nationalist passions tempt Chinese leaders to attack Taiwan, the United States and the world would be faced with a crisis more serious than any since at least the 1962 Cuban missile crisis with the Soviet Union. The United States would feel compelled to come to Taiwan's aid, resulting in a war between heavily armed countries that possess nuclear arsenals.

### CCP Impact – Lash Out

#### CCP collapse results in lash out --- escalates to WMD use and extinction.

**Renxing**, 8/5/**2005** (San, The CCP's Last-Ditch Gamble, Epoch Times, p. http://en.epochtimes.com/news/5-8-5/30975.html)

“In any event, we, the CCP, will never step down from the stage of history! We’d rather have the whole world, or even the entire globe, share life and death with us than step down from the stage of history!!! Isn’t there a ‘nuclear bondage’ theory? It means that since the nuclear weapons have bound the security of the entire world, all will die together if death is inevitable. In my view, there is another kind of bondage, and that is, the fate our Party is tied up with that of the whole world. If we, the CCP, are finished, China will be finished, and the world will be finished.” 3) “It is indeed brutal to kill one or two hundred million Americans. But that is the only path that will secure a Chinese century, a century in which the CCP leads the world. We, as revolutionary humanitarians, do not want deaths. But if history confronts us with a choice between deaths of Chinese and those of Americans, we’d have to pick the latter, as, for us, it is more important to safeguard the lives of the Chinese people and the life of our Party. That is because, after all, we are Chinese and members of the CCP. Since the day we joined the CCP, the Party’s life has always been above all else!” Since the Party’s life is “above all else,” it would not be surprising if the CCP resorts to the use of biological, chemical, and nuclear weapons in its attempt to extend its life. The CCP, which disregards human life, would not hesitate to kill two hundred million Americans, along with seven or eight hundred million Chinese, to achieve its ends. These speeches let the public see the CCP for what it really is. With evil filling its every cell the CCP intends to wage a war against humankind in its desperate attempt to cling to life. That is the main theme of the speeches.

### Coal Key to Cooperation

#### Scale of CCS development is key to concrete US-China cooperative initiatives

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Coal: Both the United States and China are coal ¶ countries. While each aspires to reduce substan-¶ tially its reliance on coal in the future, the reality ¶ is that coal will remain a critical source of power ¶ in each country for many years—and likely many ¶ decades—to come. There is no such thing as “clean ¶ coal,” but there are approaches to reducing carbon ¶ dioxide emissions from coal that hold promise of ¶ substantially reducing the climate change impact ¶ of coal-fired power.¶ Carbon capture and sequestration (CCS) is one ¶ of the approaches that holds promise. CCS entails ¶ separating out CO2 emissions, capturing that CO2 ¶ stream, and then pumping it into the ground for ¶ permanent storage. Within this broad framework ¶ there are a very large number of questions that re-¶ main unanswered. Where is it safe to store CO2 ¶ underground? What uses (such as utilizing CO2 ¶ scale more rapidly by growing in both countries’ ¶ markets. Scale is critical to bringing the cost of ¶ new breakthroughs down to a level that can meet ¶ market tests.¶ Reaching agreement on substantive priorities re-¶ quires intensive, practical consultations. Each ¶ country has strong interest groups and its own ¶ concerns. But a presidential agreement on clean ¶ energy cooperation must establish initial priori-¶ ties if it is to amount to more than a feel-good ¶ document that provides too little direction to mo-¶ tivate serious action.¶ A presidential level agreement, though, cannot ¶ go into serious detail on specific projects and ¶ details. Substantive priorities should, therefore, ¶ assume the form of identifying some particular ¶ areas of initiative and should set up a process that ¶ will move quickly to turn those identified pri-¶ orities into concrete programs and projects. The ¶ key considerations in negotiating the priorities ¶ should include:¶ • Identifying a key priority in each of five ar-¶ eas: coal, transportation, renewables, energy ¶ efficiency, and joint R&D.¶ • Prioritizing initiatives where the U.S. and ¶ China bring complementary capabilities to ¶ the table so that the initial major efforts can ¶ meet the test of being potentially significant ¶ win-win cooperative opportunities.¶ • Including among these at least one priority ¶ in which the U.S., without a major expendi-¶ ture of funds, can contribute significantly to ¶ Chinese capabilities that it is in the interests ¶ of both countries that China develop.¶ • Supporting at least one major program that ¶ will generate a sense of excitement among ¶ the publics in both countries so that U.S.-¶ China clean energy cooperation captures ¶ potential value of cooperative projects to develop ¶ and deploy carbon capture and sequestration. ¶ And cooperative public-private partnerships can ¶ facilitate the effort to raise funds, develop and ¶ share intellectual property, scale up, and drive ¶ down costs to the point where this technology be-¶ comes economically viable.¶ There are, of course, uncertainties around carbon ¶ capture and sequestration, including questions ¶ as to whether it will ever be economically viable, ¶ whether it will take such a long time to deploy at a ¶ significant scale that it should not be a priority ap-¶ proach, and whether it will prove technologically ¶ feasible. This example is, therefore, presented sim-¶ ply to illustrate that there are important areas in ¶ which U.S.-China capabilities are highly comple-¶ mentary. Whether this particular approach should ¶ be a top priority requires serious discussions be-¶ tween the two governments. At this point, it ap-¶ pears the U.S. side is more enthusiastic about the ¶ potential for CCS than is the Chinese side.¶ Energy Efficiency: Energy efficiency provides an ¶ arena in which the U.S. can contribute to Chinese ¶ capabilities at relatively modest cost. Under the ¶ Ten Year Framework the U.S. Department of En-¶ ergy began a specific program to help China’s one ¶ thousand largest enterprises to do energy audits ¶ and analyze how to improve energy efficiency.32 ¶ While well intentioned, this program has made ¶ very slow progress to date. Presidential endorse-¶ ment might help move it onto a faster track. ¶ There is considerable potential for important re-¶ sults if the program can be scaled up. This is an ¶ area in which U.S. expertise is well-developed and ¶ technology transfer can greatly facilitate improve-¶ ments in China’s energy efficiency effort. It might ¶ to pressure oil out of the ground) can be made of ¶ some of that CO2? How can costs be driven down ¶ to the point that this approach imposes a feasible ¶ economic burden? What kinds of engineering ¶ problems will need to be resolved? How much ¶ will it cost to convert a coal fired power plant ¶ so that its CO2 emissions can be captured and ¶ stored? How much does this vary according to ¶ the technology used in the power plant involved?¶ There are various experiments in carbon capture ¶ and sequestration that have begun in China, the ¶ U.S., and Europe, but none of these has been at ¶ full commercial scale.31 In addition, a great many ¶ experiments will be required in order to gain the ¶ necessary experience to cope with each of the ¶ above questions and more. For example, this ap-¶ proach to reducing greenhouse gas emissions can ¶ be highly sensitive to the specific geology of the ¶ location chosen for sequestering the CO2. ¶ U.S.-China cooperation to develop carbon cap-¶ ture and sequestration capability makes great ¶ sense because the two sides bring complemen-¶ tary capabilities to the effort. The American side ¶ to date has done more theoretical work and gar-¶ nered more technical data. But in the U.S., it takes ¶ an average of six years to clear the regulatory hur-¶ dles to construct a carbon capture and sequestra-¶ tion test bed facility, while the comparable period ¶ in China is roughly two years. The Chinese side ¶ also has advantages in terms of being able to scale ¶ up operations at less cost than is the case in the ¶ U.S., while U.S.-China cooperation will permit ¶ both sides to adopt regulatory approaches that ¶ will make it far easier to achieve scale once initial ¶ technologies have been developed. Complemen-¶ tary engineering capabilities further enhance the ¶ incorporate aspects of a clean energy corps into ¶ their programming. There would not be a single ¶ approach to what the clean energy corps does.

### Goes Global – Commitment Key

#### US interest in climate and CCS is key to Chinese cooperation – That goes global

Elizabeth Wilson, Assistant Professor, Humphrey School of Public Affairs, University of Minnesota, et al., Dongjie Zhang and Li Zheng, 5-11, [“The socio-political context for deploying carbon capture and storage¶ in China and the U.S,” Global Environmental Change 21 (2011) 324–335, <http://www.sciencedirect.com/science/article/pii/S0959378011000136>] E. Liu

The international dimensions of CCS technology development¶ are demonstrated by emerging international partnerships and¶ pilot projects. Many argue that cooperation between the U.S. and¶ China on CCS could be vital for both countries and spur the¶ development of CCS around the world (Meng et al., 2007; Qian¶ et al., 2009; Schell et al., 2009). For example, deploying pilot CCS¶ projects in China, where they are associated with lower costs,¶ 8Or any other low-carbon energy system.¶ could help to facilitate experience and learning and drive down¶ CCS technology costs globally, thus reducing some barriers to U.S.¶ deployment.¶ Although experience and driving down potential cost and¶ efficiency barriers are attractive from an economic and technical¶ perspective and might be especially feasible for both IGCC and¶ capture technologies, many of the barriers to CCS deployment are¶ not technical in nature but rather are embedded within the¶ evolving socio-political system. Thus, the information obtained¶ from CCS demonstration projects will be both technical and¶ economic, but crucially, it will also be embedded within local¶ socio-political contexts. If the U.S. does not view reducing GHG¶ emissions as an important objective, or China sees CCS as being¶ misaligned with its strategic development interests, no key local¶ socio-political context to facilitate CCS deployment will emerge.¶ This analysis implicitly assumes that coal will remain a key¶ energy resource for both the U.S. and China and that CCS will¶ remain necessary. Potentially ‘game changing’ advancements in¶ other energy technologies or shifts in resources, such as recent¶ tight shale natural gas production in the U.S., could potentially¶ alter the dependence on coal, assuming that the emerging¶ environmental problems associated with tight gas extraction¶ can be managed (Holditch, 2006). This type of discovery could also¶ shift the international dynamics and coalitions supporting the¶ development of CCS, and it is unclear how China would view CCS if¶ the U.S. were no longer interested in deploying this technology.

### Solves China War

#### Energy cooperation with China is key to prevent competition over oil

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Fudan University, 4-5-12, [“The Role of Nontraditional Security in¶ China–US Relations: common ground or¶ contradictory arena?,” Journal of Contemporary China (2012), 21(76), July, 623–636, <http://www.tandfonline.com/doi/abs/10.1080/10670564.2012.666833>] E. Liu

Despite the many agreements and frameworks between China and the US, the¶ majority of these accords have yet to be implemented effectively. Following the¶ inauguration of Barack Obama as President of the United States, bilateral cooperation¶ onenergygainednewmomentum.On16July2009,USEnergySecretaryStevenChu¶ furthered energy cooperation during his visit to China. The two countries agreed to¶ establisha‘JointCleanEnergyResearchCenter’,whichwouldcreateenergy-efficient¶ cars, buildings, and new carbon capture technology. In November 2009, President¶ Obama’s visit to China was considered primarily as a ‘visit for energy’ (neng yuan¶ zhi xing). Since then, the Chinese and US governments have strengthened their¶ cooperationonenergybyaddressingtheWestinghouseAdvancedPressurizedReactor¶ (AP1000) and by signing the Memorandum of Cooperation (MOC) on nuclear safety.¶ This was conducted between the China National Nuclear Safety Administration¶ (NNSA/China) and the US Nuclear Regulatory Commission by setting up a shale¶ gas task force, the release of a US–China Joint Statement on Energy Security¶ Cooperation, and the launch of a new US–China Renewable Energy Partnership.¶ It is clear that energy has become an important part of the cooperation between¶ China and the US and that energy cooperation has promoted strategic relations in¶ other fields. However, despite the high level of cooperation between both nations¶ in the energy sector, there still remains a level of disagreement and divergence.¶ The overarching and guiding reason for Sino–US cooperation on energy issues is¶ that both countries believe that they are facing the same energy problems, which can¶ only be overcome with teamwork and a global effort. It is true that both nations are¶ facing the same threat, but to varying degrees. As a whole, the energy security¶ problem that the US currently faces is not as urgent as China’s. Usually, about¶ 40–50% of US oil imports are from the American continent and 20% or less from the¶ turbulent Middle East.21Among world powers, the US has the lowest dependency on¶ oil imports from the Middle East next to Russia. Therefore, energy security for the¶ US doesn’t have to deal with whether the US can meet its domestic oil consumption¶ demand, but rather how to control worldwide oil resources. Alternatively, China is¶ facing a totally different situation. China is an oil-scarce country with its overseas oil¶ dependence rising rapidly. Since the end of 2009, China’s foreign oil dependence has¶ already exceeded 50%. China’s dependency on oil from the Middle East is beyond¶ that of the United States. Due in part to this, it is no wonder the task of fueling the¶ Chinese society with a sustainable oil supply has become increasingly more difficult.¶ In other words, energy security is a core national interest for China. ¶ The energy strategies of China are sharply distinguished from those of the US. The¶ US possesses the strongest military force in the world and intends to use both high¶ political tools and market power to solve energy security problems. Currently, the US¶ is trying to diversify its oil import sources in order to strengthen greater independence¶ and freedom in dealing with Middle East issues. In the cases of the Iraq War and¶ South Sudan’s independence, US efforts showed a force advantage and superiority¶ over China and other international contenders. In the case of Libya, the US was apt to¶ choose military means to dispel Qaddafi, rather than negotiations and diplomacy,¶ which were advocated by China, Russia, and some European allies, such as Germany¶ and Italy. As a developing country, China’s military capabilities and international¶ influence remain far behind those of the US. China guarantees its energy security¶ mainly through robust market power and skillful diplomacy. Even though China¶ continually keeps a low profile in the energy market, China’s energy demand is rising¶ faster than most countries. The International Energy Agency (IEA) predicts that¶ China’s oil demand will rise to about ten million barrels per day by 2030, of which¶ 80% will be imported.22 This is projected to cause severe competition between China¶ and the US for the acquisition of oil. A historical narrative of the Western world¶ shows that if the two biggest energy consumers cannot handle their relations well,¶ then energy is a potential trigger for military conflict.23¶ Inthefieldoffossilfuels,itstandsthatcoordinatinginterestsandstrategiesbetween¶ China and the US could prove more difficult. For the sake of improving bilateral ties¶ and mutual interests, as well as for the sake of holding new and renewable energy as¶ a must-explore arena, it is necessary for China and the US to devote more effort to¶ collaboration in the energy sector. Perhaps further devotion to a mutually beneficial¶ energy relationship is deserving of more time than other issues between the two¶ nations. Certainly, the two countries have cooperated well and have signed plenty of¶ agreements, protocols, and initiatives. Some of those agreements have been put into¶ practice and have run a good course.

### Solves Global Cooperation – Generic

#### US-China cooperation on climate is key to momentum for global agreements

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Astute U.S.-China cooperation can make expec-¶ tations about Copenhagen more realistic and the ¶ meeting itself more likely to lay the groundwork ¶ for a full agreement before the Kyoto Protocol ex-¶ pires in 2012. But it will take astute leadership at ¶ the highest levels in both Washington and Beijing ¶ —and effective management of domestic politics ¶ in both countries—to achieve these results. The ¶ issue could not be more important; unfortunately, ¶ the chances of success are at this point quite un-¶ certain.¶ approach to reaching country-specific targets has ¶ not yet been settled.¶ The United States and China can leverage their ¶ own cooperation on clean energy and climate ¶ change in several ways to promote success at Co-¶ penhagen. They can work together to re-calibrate ¶ the standards for that “success” along the lines just ¶ noted. A U.S.-China bilateral agreement on coop-¶ eration on clean energy can impart momentum to ¶ Copenhagen, given the tremendous importance ¶ of both countries in the climate change equation. ¶ Finally, Beijing and Washington can use their in-¶ fluence in other key negotiating forums such as ¶ the Major Economies Forum to promote mutual ¶ he year 2009 is unusually consequential ¶ in terms of the global response to climate ¶ change. Put simply, the Copenhagen meeting in ¶ December can either advance toward more effec-¶ tive worldwide coordinated actions or highlight ¶ fissures and sap the momentum for a global agree-¶ ment. The roles of the United States and China ¶ will be influential in the run-up to Copenhagen, ¶ and in this context the politics of and progress to-¶ ward U.S.-China cooperation on clean energy and ¶ climate change warrant attention.

### Solves Warming and Conflict

#### CCS certainty is key to US-China cooperation– The alternative is conflicts over fossil fuels

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There are three distinct international regimes that the US and China have to think¶ about in an integrated way and without the luxury of all that much time to do so: the¶ climate change regime, the energy regime and the intellectual property rights regime.¶ On climate change the IPCC’s work shows that time is becoming increasingly short.¶ Essentially the major emitters have to peak by 2020 if there is to be a realistic chance of¶ keeping to the 2ºC guardrail. Unless China and the US both agree to take on serious¶ mitigation targets the world will be left to negotiate a climate regime that is primarily¶ about adaptation to dangerous climate change. The costs of this may well make the¶ current costs of mitigation look trivial. An immediate issue facing both countries is¶ what to do about their coal-based energy systems. The IEA’s emissions reduction¶ scenario that was discussed earlier shows that CCS has to arrive early. However, the¶ CSLF’s technology map suggests that it will not arrive till after 2020.38One important¶ issue is whether despite all the money being put into CCS enough is going into the¶ basic R&D that is required to make the delivery of zero emissions coal-fired electricity¶ an economic and technological reality. Encouraging the development of a R&D facility¶ along the lines of the original FutureGen project is one option.¶ However, given the uncertainties surrounding CCS, a better option for China and¶ the US may be to consider the role they might play together in helping to re-shape the¶ world’s energy regime. This regime might be summed up as a negotiated monopoly¶ regime in which the US has been the dominant actor and the IEA the most important¶ international organization. Little creative thinking has come out of the IEA on the role¶ of renewable energy in the world energy system. The IEA’s core business remains¶ fossil fuel and ensuring that the world has sufficient reserves of oil in place to deal¶ with disruptions to supply.39Continuing with a regime that is tilted towards fossil¶ fuels will increase each country’s perception of the other as a competitor in the game of¶ energy survival. The game of securing oil supplies is zero sum. The race to secure¶ fossil fuel supplies is more likely to trigger an adversarial power politics than it is the¶ co-operation that the world so desperately needs on energy and climate change.¶ Instead of setting themselves up for competition over energy China and the US should¶ look to the development of an alternative regime in which they might do more to co-¶ ordinate the emergence of renewable energy technologies in order to achieve their¶ energy security goals and that would help both work towards an emission reduction¶ scenario that is consistent with the 2ºC guardrail. One possible forum in which to begin¶ a discussion is the newly established International Renewable Energy Agency.40It¶ offers both the possibility of a fresh start, something that is less true of old world clubs¶ like the IEA and the OECD.

### Energy Causes Asia War – Outweighs Cooperation

#### Energy security inflames all disputes and conflict in Asia– Cooperation is underdeveloped now

Jae-Seung Lee, visiting scholar with the Korean Studies Program, professor of international studies at Korea University, 10, [“Energy security and cooperation in Northeast Asia,” Korean Journal of Defense Analysis Volume 22, Issue 2, 2010, http://kida.re.kr/data/kjda/RKJD\_A\_474968\_P.pdf] E. Liu

However, despite the perceived necessity of energy cooperation, the actual¶ implementation of energy projects has reflected strong competition among the major¶ consuming countries in the region, and numerous initiatives for cooperation have not¶ shown satisfactory progress. The nature of energy relations in Northeast Asia has¶ been essentially competitive, reflecting the region’s economic and geopolitical¶ constraints. The pursuit of national energy security to guarantee stable energy¶ procurement has resulted in conflicting consequences, through which the interests of¶ these countries have often clashed. Considering these structural concerns, energy¶ relations in Northeast Asia have been highly susceptible to other political and¶ security conflicts. The potential sources of conflict stemming from energy competi-¶ tion include territorial, diplomatic, and political ones.¶ As Russia is the only energy supplier in the region, energy rivalries among¶ Northeast Asian consumers have intensified.2For example, Japan and China have¶ been competing for years over the East Siberian oil pipeline project (ESPO).¶ Furthermore, energy development projects have often brought sensitive territorial¶ disputes. There remains a potential risk for a sea dispute among Japan, China, and¶ the two Koreas in terms of offshore oil and gas field development.3The dispute in¶ the East China Sea (over the development of the Chunshao gas field) indicates that¶ similar disputes could recur among the Northeast Asian countries in the Yellow Sea¶ or in the East Sea. The pursuit of strategic energy security, therefore, has often led to¶ conflicts, rather than cooperation, among the consumers. From this geopolitical¶ perspective, energy cooperation in Northeast Asia is necessary—not only for the¶ facilitation of energy supply projects, but also for the prevention of these potential¶ conflicts stemming from attempts to strengthen national energy security.

### Gas – China-Russia Relations

#### China’s oil dependence causes an alliance with Russia that hedges against the US

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For almost two decades, Russia has been a non-factor in the East Asian balance ¶ of power.1 This situation is about to change dramatically. The tapping of Siberia’s ¶ massive energy wealth, both oil and natural gas, will raise Russia’s profile in the ¶ region significantly. Indeed, the final orientation of the associated energy trans-¶ port infrastructure – toward China or toward Japan – may play a decisive role ¶ in the evolving balance of power in East Asia.¶ If the Kremlin favours Beijing, the resulting Sino-Russian energy nexus – ¶ joining the world’s fastest growing energy consumer with one of the world’s ¶ fastest growing producers – would support China’s growing claim to regional ¶ pre-eminence. From Beijing’s point of view, this relationship would promise a ¶ relatively secure and stable foundation for one of history’s most extraordinary ¶ economic transformations. At stake are energy reserves in eastern Russia that ¶ far exceed those in the entire Caspian Basin.2 Moreover, according to Chinese ¶ strategists, robust Sino-Russian energy links would decrease the vulnerability ¶ of Beijing’s sea lines of communication to forms of ’external pressure‘ in case ¶ of a crisis concerning Taiwan or the South China Sea.3 From the standpoint of ¶ global politics, the formation of the Sino-Russian energy nexus would represent ¶ a strong consolidation of an emergent bipolar structure in East Asia, with one ¶ pole led by China (and including Russia) and one led by the United States (and ¶ including Japan).4¶ Events in 2004, however, appeared to suggest that Tokyo might gain the upper ¶ hand regarding the future of Siberia’s energy infrastructure. Japan’s willingness to guarantee financing for the project – perhaps as much as $15 billion – together ¶ with the Kremlin’s aggressive prosecution of Mikhail Khordorkovsky, a major ¶ proponent of Sino-Russian energy ties, appeared to strengthen Tokyo’s hand. If ¶ Japan succeeds in this endeavour, a more multi-polar structure could emerge ¶ in East Asia. In particular, enhanced Russo-Japanese energy cooperation could ¶ spur the much-needed breakthrough on the bitterly contested ‘northern territo-¶ ries’, which Stalin seized in the closing days of the Second World War. Such a ¶ rapprochement could serve as an important restraint on growing Chinese ambi-¶ tions and appetites. ¶ Despite various statements made by top Russian officials during 2005 sug-¶ gesting that Russia will give priority to China over Japan as the recipient of oil ¶ supplies from Siberia, the issue has not been resolved definitively and pipeline ¶ construction plans will depend on the pace of development of industrial deposits ¶ of oil.5 During a November 2005 trip to Japan, Russian President Vladimir Putin ¶ said ‘we chose the Lake Baikal northern route, which will be costly, because we ¶ will be able to link it to the Pacific route. We would certainly like to cooperate with ¶ Japan.’6 In December 2005, Putin reiterated that the pipeline will reach the Pacific ¶ Ocean.7 But as the Yukos affair amply illustrates, internal political dynamics may ¶ be as important to the final decision as rational foreign policy and economic ¶ calculations. Continuing indecision by the Kremlin also reflects the enormous ¶ ambitions of the respective projects, and the weighty geopolitical consequences ¶ of the choice.¶ A Sino-Russian military exercise of unprecedented size took place in August ¶ 2005. The ‘coloured revolutions’ that had occurred in Georgia, Ukraine and ¶ Kyrgyszstan during 2003–05 gave a tangible impetus to Sino-Russian relations. ¶ Indeed, with the resultant July 2005 Shanghai Cooperation Organisation (SCO) ¶ demarche against the continuing presence of US bases in Central Asia, the broad ¶ geopolitical implications of a Sino-Russian energy nexus come into greater focus. ¶ Thirsty dragon¶ Russia’s vast energy resources have become only more enticing to Beijing ¶ strategists since China’s spectacular economic growth emerged as the most fun-¶ damental cause of surging world oil prices in the last five years. In 2003, PRC ¶ oil consumption increased by a whopping 31%, a record that may have been ¶ exceeded the following year. Early in 2004, China edged out Japan to become ¶ the second largest world crude importer. By the end of 2004, Chinese petroleum ¶ corporations imported almost half (more than 110 million tonnes) of the total ¶ annual consumption – which reached 250m tonnes. Estimates show that the ¶ imported volume will rise to 200m tonnes in 2010, and 250m tonnes in 2020.8 According to data from the International Energy Agency (IEA), the volume of ¶ imported crude will rise from 34% today to more than 80% by 2030. In other ¶ words, China will have to import approximately 10m barrels per day (b/d) of ¶ crude – roughly equivalent to US daily imports in 2000.9¶ According to Chinese sources, Beijing’s traditional¶ reliance on coal will be ¶ reduced in the future: from 77.9% in 1995 to 70% in 2005 to approximately 62.5% ¶ in 2015. Meanwhile, natural gas will receive preference for economic and eco-¶ logical reasons, constituting perhaps 9–10% of the energy mix in 2010. By 2020, ¶ natural gas consumption is expected to rise from the current 30bn cubic meters ¶ (bcm) to an estimated 200 bcm, of which 120bn will be imported. The increasing ¶ salience of imports is determined by the fact that China’s energy reserves are ¶ rather limited. Although China has substantial coal reserves (33% of the world ¶ supply), its oil (2–3%) and gas (1%) reserves are not large.

### China-Russia Relations – Hegemony and War

#### That alliance creates multiple scenarios for proliferation and war

Stephen Blank, Research Professor of National Security Affairs at the Strategic Studies Institute of the U.S. Army War College, 3-09, p[“Russia And Arms Control: Are There Opportunities For The Obama Administration?,” http://www.strategicstudiesinstitute.army.mil/pdffiles/pub908.pdf]

Consequently, the danger is that this ideological-strategic rivalry will harden, leading to a polarized, bilateral, and hostile division of Asia into blocs based on a Sino-Russian bloc confronting a U.S. alliance system led by alliances with Japan, South Korea, and Australia. Some Western writers have already opined that Sino- Russian relations appear to be tending towards an anti- American alliance in both Northeast and Central Asia.235 But more recently both Asian and Western writers have begun to argue that such a polarization in Asia could be taking shape. The shared interest of perceiving America as an ideological and geopolitical threat has also united Moscow and Beijing in a common cause.236 Already in the 1990s, prominent analysts of world politics like Richard Betts and Robert Jervis, and then subsequent Central Intelligence Agency (CIA) studies, postulated that the greatest security threat to American interests would be a Russian-Chinese alliance.237 Arguably, that is happening now and occurs under conditions of the energy crisis that magnifies Russia’s importance to China beyond providing diplomatic support, cover for China’s strategic rear, and arms sales.238 That alliance would encompass the following points of friction with Washington: strategic resistance to U.S. interests in Central and Northeast Asia, resistance to antiproliferation and pressures upon the regimes in Iran and North Korea, an energy alliance, an ideological counteroffensive against U.S. support for democratization abroad, and the rearming of both Russia and China, if not their proxies and allies, with a view towards conflict with America.239 One South Korean columnist, Kim Yo’ng Hu’i, wrote in 2005 that, China and Russia are reviving their past strategic partnership to face their strongest rival, the United States. A structure of strategic competition and confrontation between the United States and India on the one side, and Russia and China on the other is unfolding in the eastern half of the Eurasian continent including the Korean peninsula. Such a situation will definitely bring a huge wave of shock to the Korean peninsula, directly dealing with the strategic flexibility of U.S. forces in Korea. If China and Russia train their military forces together in the sea off the coast of China’s Liaodong Peninsula, it will also have an effect on the 21st century strategic plan of Korea. We will now need to think of Northeast Asia on a much broader scale. The eastern half of Eurasia, including Central Asia, has to be included in our strategic plan for the future.240 Since then, Lyle Goldstein and Vitaly Kozyrev have similarly written that, If the Kremlin favors Beijing, the resulting Sino-Russian energy nexus—joining the world’s fastest growing energy consumer with one of the world’s fastest growing producers—would support China’s growing claim to regional preeminence. From Beijing’s point of view, this relationship would promise a relatively secure and stable foundation for one of history’s most extraordinary economic transformations. At stake are energy reserves in eastern Russia that far exceed those in the entire Caspian basin. Moreover, according to Chinese strategists, robust Sino-Russian energy links would decrease the vulnerability of Beijing’s sea lines of communication to forms of “external pressure” in case of a crisis concerning Taiwan or the South China Sea. From the standpoint of global politics, the formation of the Sino-Russian energy nexus would represent a strong consolidation of an emergent bipolar structure in East Asia, with one pole led by China (and including Russia) and one led by the United States (and including Japan).241 Russia’s tie to China certainly expresses a deep strategic identity or congruence of interests on a host of issues from Korea to Central Asia and could have significant military implications. Those implications are not just due to Russian arms sales to China, which are clearly tied to an anti-American military scenario, most probably connected with Taiwan. They also include the possibility of joint military action in response to a regime crisis in the DPRK.242

### Oil and Gas Pursuits Cause War/Turn Heg

#### Chinese search for oil and gas restrains US influence and is the most likely scenario for conflict

Flynt Leverett, senior fellow at the Saban Center for Middle East Policy at The¶ Brookings Institution and Jeffrey Bader, director of the Brookings China Initiative, Winter 05, [“Managing China-U.S.¶ Energy Competition,” The Washington Quarterly • 29:1 pp. 187–201, <http://www.masteruniteramo.it/pdf/articoliesaggi_perautore_pdf/leverett-bader_cina%20in%20medio%20oriente.pdf>] E. Liu

The bid by the China National Offshore Oil Corporation (CNOOC)¶ to acquire Unocal earlier this year triggered not only a hostile reaction in¶ the U.S. Congress but also growing interest and debate within the foreign¶ policy community about the rapid growth in China’s energy demand and the¶ prospect for competition between the United States and China for access to¶ global oil and gas resources.1 Henry Kissinger has gone so far as to argue¶ that competition over hydrocarbon resources will be the most likely cause¶ for international conflict in coming years.2 China’s hunt for oil is clearly in-¶ fluencing its foreign policy toward its neighbors, such as Russia, Japan, and¶ the Central Asian states, and toward regions as far afield as sub-Saharan Af-¶ rica and Latin America.3 As China seeks access to global energy resources,¶ its status as a rising power is already enabling it to exercise influence in ways¶ that make it more difficult for the United States and the West to achieve¶ their goals on a number of issues. The potentially explosive combination of¶ a China less willing to passively accept U.S. leadership and the prospect of¶ competition between China and other states for control over vital energy¶ resources poses particularly critical challenges to U.S. interests in the¶ Middle East. Chinese engagement in the Middle East has expanded economically, po-¶ litically, and strategically over the last several years. Since the late 1990s,¶ Beijing’s policies toward the region have been closely linked to the objec-¶ tives of the three major, state-owned Chinese energy companies—the China¶ National Petroleum Corporation (CNPC), the China National Petrochemi-¶ cal Corporation (Sinopec), and CNOOC—to seek access to Middle East-¶ ern oil and gas, frequently on an exclusive basis. Since 2002, the Middle¶ East has become the leading arena for Beijing’s efforts to secure effective¶ ownership of critical hydrocarbon resources, rather than relying solely on in-¶ ternational markets to meet China’s energy import needs. There is every¶ reason to anticipate that China will continue and even intensify its empha-¶ sis on the Middle East as part of its energy security strategy. China will likely¶ keep working to expand its ties to the region’s energy exporters over the¶ next several years to ensure that it is not disadvantaged relative to other for-¶ eign customers and to maximize its access to hydrocarbon resources under¶ any foreseeable circumstances, including possible military conflict with the¶ United States. It seems doubtful that Chinese energy companies’ fledgling¶ efforts to lock up petroleum resources will succeed in keeping a critical mass¶ of oil reserves off an increasingly integrated and fluid global oil market.¶ Nevertheless, China’s search for oil is making it a new competitor to the¶ United States for influence in the Middle East. If not managed prudently,¶ this competition will generate multiple points of bilateral friction and dam-¶ age U.S. strategic interests in the region.

### Natural Gas Impact – China Seas

#### China’s demand on international gas markets causes territorial disputes in the South China Sea

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But while China is likely to have a major impact on gas markets in the short to medium ¶ term, it has made clear its intention to develop domestic supplies as well. Although onshore ¶ reserves are likely to be developed first, the potential for offshore gas resources is significant ¶ and their development is likely to come to the fore in the longer time frame. The gas reserves ¶ in the East China Sea and South China Sea could serve to intensify existing disputes over ¶ territorial waters between China and the neighboring nations. A dispute in the East China Sea ¶ between China and Japan over the Diaoyu (or Senkaku) Islands has resurfaced, and both are ¶ contesting sovereignty over the Chunxiao gas field. While the disputes between China and the ¶ Southeast Asian nations over territorial waters in the South China Sea have been long stand-¶ ing, in recent years China has indicated that the waters of the South China Sea fall within its ¶ core national interests, thereby hardening its stance in the dispute.¶ It is clear that in the space of five years China has emerged as a major part of the global ¶ gas industry, both as a consumer and potentially as a supplier. Its impact on global gas mar-¶ kets already is significant and will continue to grow. The implications for the gas industry ¶ will be far reaching and are likely to have huge implications on economic and geopolitical ¶ relations for a long time to come.

### China Seas – US Draw-in

#### Disputes in the China Seas cause US war – Military force, Japan alliance, incidents

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In contrast with the situation Taiwan Strait, the possibility that the US and China could find themselves in a crisis triggered by disputes in the South China Sea or the East China Sea has increased. Since 2005, a period of relatively low tension over sovereignty claims to maritime territories and seas in East Asia has given way to growing concern about the willingness and ability of China and its neighbors to resolve their differences peacefully.15 Beijing refuses to rule out the use of military force as the ultimate means for ensuring claims to what it views sovereign territory and adjacent waters. While the US is not a principal in any of these vexing regional disputes, Washington has clearly stated its principled opposition to the use of force to resolve such matters and, more to the point, has treaty commitments to two of the countries (Japan and the Philippines) contesting China’s claims, and increasingly close ties with a third (Vietnam).16 The potential implications are clearest in the East China Sea. The US has explicitly indicated that its military commitment under the US-Japan security treaty extends to all territories administered by Tokyo, including the key disputed islands (usually referred to as the Senkaku islands by Japan, and the Diaoyu islands by China).17 In addition, disagreements have intensified between China and the US over American military forces operating in the international seas and airspace near China. The US insists on its longstanding interest in freedom of navigation in and above waters beyond the 12 mile territorial limit that it defines as the high seas. China, by contrast, asserts that the waters in which unrestricted freedom of navigation extends to military vessels begins only outside the country’s EEZ— precluding unconstrained US air and naval operations beyond 12 miles but still within the 200 mile limit.18 This disagreement is not a merely an academic dispute about international law, both customary maritime law and the terms of UNCLOS (which China has ratified but the US has not). On the contrary, US naval vessels and aircraft conduct intelligence gathering activities in and above the waters within China’s EEZ that both sides know have important military implications. Moreover, the prospect for confrontations resulting from this disagreement is more than just conceivable; there have already been several publicly reported incidents.19 These incidents have precipitated angry standoffs between Chinese and American vessels, followed by each side restating its principled position20 They have also precipitated more frightening consequences (as in the case of the EP-3 collision with a trailing Chinese fighter jet that resulted in the death of the Chinese pilot and the emergency landing of the aircraft on Hainan followed by tense and difficult negotiations to release the American crew and aircraft). The fundamental disagreement between the US and China about rights of passage through and over maritime areas may also have volatile implications for vital SLOCs in the South China Sea near territories that Beijing claims as its own. The extensiveness of China’s claims to the Spratlys in particular could provide a basis for insisting that much of the South China Sea falls within China’s EEZ requiring foreign military vessels to seek Beijing’s consent before passing through its sea lanes.21 The sensitivity of this issue and its potential for Sino- American friction, was underscored during a 2010 ASEAN Regional Forum in Hanoi when China’s foreign minister reacted in an unexpectedly harsh way to Secretary of State Clinton’s rather mild diplomatic expressions of American hopes for a peaceful resolution of sovereignty disputes in the South China Sea and her suggestions that multilateral forums could be useful in this regard.22

### South China Sea – Terminal

#### Aggression over the South China Sea escalates --- miscalculation leads to nuclear war.

**Fisher**, 10/31/**2011** (Max – associate editor at the Atlantic, 5 Most Likely Ways the U.S. and China Could Spark Accidental Nuclear War, The Atlantic, p. http://www.theatlantic.com/international/archive/2011/10/5-most-likely-ways-the-us-and-china-could-spark-accidental-nuclear-war/247616/#slide1)

After 10 years of close but unproductive talks, the U.S. and China still fail to understand one another's nuclear weapons policies, according to a disturbing report by Global Security Newswire. In other words, neither the U.S. nor China knows when the other will or will not use a nuclear weapon against the other. That's not due to hostility, secrecy, or deliberate foreign policy -- it's a combination of mistrust between individual negotiators and poor communication; at times, something as simple as a shoddy translation has prevented the two major powers from coming together. Though nuclear war between the U.S. and China is still extremely unlikely, because the two countries do not fully understand when the other will and will not deploy nuclear weapons, the odds of starting an accidental nuclear conflict are much higher. Neither the U.S. nor China has any interest in any kind of war with one other, nuclear or non-nuclear. The greater risk is an accident. Here's how it would happen. First, an unforeseen event that sparks a small conflict or threat of conflict. Second, a rapid escalation that moves too fast for either side to defuse. And, third, a mutual misunderstanding of one another's intentions. This three-part process can move so quickly that the best way to avert a nuclear war is for both sides to have absolute confidence that they understand when the other will and will not use a nuclear weapon. Without this, U.S. and Chinese policy-makers would have to guess -- perhaps with only a few minutes -- if and when the other side would go nuclear. This is especially scary because both sides have good reason to err on the side of assuming nuclear war. If you think there's a 50-50 chance that someone is about to lob a nuclear bomb at you, your incentive is to launch a preventative strike, just to be safe. This is especially true because you know the other side is thinking the exact same thing. In fact, even if you think the other side probably won't launch an ICBM your way, they actually might if they fear that you're misreading their intentions or if they fear that you might over-react; this means they have a greater incentive to launch a preemptive strike, which means that you have a greater incentive to launch a preemptive strike, in turn raising their incentives, and on and on until one tiny kernel of doubt can lead to a full-fledged war that nobody wants. The U.S. and the Soviet Union faced similar problems, with one important difference: speed. During the first decades of the Cold War, nuclear bombs had to be delivered by sluggish bombers that could take hours to reach their targets and be recalled at any time. Escalation was much slower and the risks of it spiraling out of control were much lower. By the time that both countries developed the ICBMs that made global annihilation something that could happen within a matter of minutes, they'd also had a generation to sort out an extremely clear understanding of one another's nuclear policies. But the U.S. and China have no such luxury -- we inherited a world where total mutual destruction can happen as quickly as the time it takes to turn a key and push a button. The U.S. has the world's second-largest nuclear arsenal with around 5,000 warheads (first-ranked Russia has more warheads but less capability for flinging them around the globe); China has only about 200, so the danger of accidental war would seem to disproportionately threaten China. But the greatest risk is probably to the states on China's periphery. The borders of East Asia are still not entirely settled; there are a number of small, disputed territories, many of them bordering China. But the biggest potential conflict points are on water: disputed naval borders, disputed islands, disputed shipping lanes, and disputed underwater energy reserves. These regional disputes have already led to a handful of small-scale naval skirmishes and diplomatic stand-offs. It's not difficult to foresee one of them spiraling out of control. But what if the country squaring off with China happens to have a defense treaty with the U.S.?

### AT: IP Rights

#### IP concerns are trivial – No leverage and recognition of warming dangers

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Finally, this leaves the question of what do about the issue of intellectual property¶ rights. As heretical as it sounds, the issue is comparatively trivial. This is especially¶ true when compared to the IPCC’s predictions about the consequences of dangerous¶ climate change. Obviously China and the US can turn this into a make or break issue if¶ they so choose. The US, however, no longer has the leverage over China that it did¶ when China was seeking membership of the WTO. In any case China has made great¶ strides in improving its patent system. In a remarkably short space of time it has¶ created a world class patent office that operates as an International Searching¶ Authority under the Patent Co-operation Treaty and which has close collaborative¶ relations with other major patent offices such as the European Patent Office and the¶ German Patent Office. China has also made low cost patent dispute resolution a¶ priority, creating a system of local administrative authorities that can decide patent¶ infringement matters.41China for its part has to recognise that the US will never agree¶ to a formal weakening of the intellectual property regime in the context of the climate¶ change negotiations. Probably the best strategy here is to keep intellectual property¶ rights out of climate change negotiations and deal with specific issues as they arise on¶ a case by case basis. Today there exists a rich set of governance tools for dealing with¶ intellectual property problems, tools that range from private actor licensing strategies¶ such as those to be found in open source to conventional state-based tools such as¶ compulsory licensing. The example of FutureGen shows that large companies can¶ sometimes negotiate arrangements over intellectual property rights that do advance¶ the goal of diffusion.¶ The choices facing China and the US are stark and the time horizon short. They can¶ choose to play power politics until fossil fuel is but a few dying embers drifting over¶ lands wasted by climate change. Alternatively they can recognise that climate change¶ is a matter of survival governance in which they must create strong regimes that will¶ bind them together in co-operation.

### AT: Other Cooperation Checks Conflict

#### Regional energy cooperation fails and nothing can substitute – Unilateral pursuits cause competition

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Despite the common challenge of energy security, regional attempts to build energy¶ cooperation in Northeast Asia have been largely unsuccessful because of a number of¶ constraints. Considering the dual nature of the energy agenda, Northeast Asian¶ energy cooperation has reflected both geopolitical and economic constraints.29First,¶ Northeast Asian energy cooperation is likely to be influenced by the political and¶ security environments, where the remnants of the Cold War still hinder full-scale¶ cooperation. Despite the growing economic interdependence, there still remain a¶ number of potential sources of territorial and political disputes among Northeast¶ Asian countries.30Political trust is still uncertain, and historical antipathy still lingers¶ in this region.¶ Second, the slow progress of regional energy cooperation has been due to an¶ insufficient level of momentum for the achievement of active regional energy¶ cooperation. Many obstacles to energy security cooperation have originated from the¶ lack of a strong political will of the governments involved. China has been¶ unenthusiastic with regard to Northeast Asian cooperation, while trying to address¶ the energy supply problem by strengthening its relationships with energy producing¶ nations on its own, rather than through collaborations with its rivals.31Russia and¶ Central Asia, as well as Africa, are being targeted for energy cooperation.32Japan¶ also has pursued active energy cooperation with producing countries and tried to¶ increase the self-development ratio of its overseas natural resources development to¶ approximately 40 percent by 2030.33Regarding regional energy cooperation, Japan¶ has been proactive in promoting energy cooperation in Southeast Asia and the Asia¶ Pacific. South Korea has expressed its preference for cooperation among Northeast¶ Asian countries, but its focus has been more toward energy cooperation with Russia.¶ As the only supplier in the region, Russia has maintained a keen interest in the¶ expansion of its market to include Northeast Asia but also has recognized the¶ imperative of using its energy resources to maximize its economic growth and¶ political leverage.34These Northeast Asian countries have had different perspectives¶ and focuses regarding energy security. They have thus relied on the unilateral pursuit¶ of energy supply and development, which diminishes the necessity of regional energy¶ cooperation.¶ Furthermore, potential mutual benefits that could be derived from energy¶ cooperation have not been clearly visualized, and the sense of urgency has not been¶ strong enough. Considering these conditions, the current structure of Northeast¶ Asian energy relations is inclined to be more competitive than cooperative going¶ forward. Under the current Northeast Asian situation, it would be overly optimistic¶ to expect short-term results through comprehensive energy cooperation. participating countries should determine the cooperative elements that may exist¶ within this competitive structure.35The virtual structure of Northeast Asian energy¶ cooperation reflects both economic and political considerations of the actors. Energy¶ importers such as South Korea, China, and Japan all have different national¶ interests, and if energy-exporting Russia were accounted for, the sets of interests¶ would become even more diverse.36A political alliance does not necessarily lead to¶ an energy alliance. At the same time, economic and business interests can never be¶ free from the geopolitical situation of Northeast Asia. As such, the likely scenario¶ may be the existence of various forms of limited associations and competition that¶ simultaneously overlap each other.

## Internal Instability

### Top Level

#### Social unrest threatens Chinese rule now – Clean coal is key to social benefits, equality, environmental legitimacy, and perception of prosperity

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A very different approach toward the pricing of environmental externalities will ¶ be needed if China is to mount a successful national energy security strategy ¶ based on clean coal. The key to such a strategy will be China’s capacity to set ¶ energy prices at levels that will encourage the greater conservation of energy ¶ and the more rigorous enforcement of environmental standards. The ¶ government, of course, is reluctant to impose these burdens at a time when it ¶ has based much of its legitimacy on the promise of universal access to a ¶ middle class lifestyle. ¶ ¶ 5 ¶ ¶ The problem is that rising social unrest throughout China already threatens the ¶ legitimacy of the regime. Much of this unrest relates to protests over conditions ¶ of environmental abuse and neglect. There is little point in a policy of ¶ continued subsidization of urban energy consumers when this can only ¶ perpetuate these conditions by adding to resource scarcities that will increase ¶ pressures on the environment. In other words, if energy security is a national ¶ security concern for China, so, too, is rising social unrest. And from a national ¶ security perspective, there is no real conflict between the requirements of ¶ energy security and the requirements of social peace. The same sacrifices ¶ that are needed to enhance energy security—higher energy prices and greater ¶ resource conservation—can also, in the long run, help to promote social ¶ stability by reducing the pressure on the environment. The appeal to patriotism ¶ offers the Chinese government a way to achieve these gains by demanding ¶ sacrifices of the Chinese people without having to put its own legitimacy on the ¶ line—and, in fact, while enhancing it. ¶ ¶ IMPLICATIONS OF A CLEAN COAL STRATEGY FOR CHINA ¶ ¶ Social and Political Stability ¶ ¶ A national energy security strategy based on clean coal has implications for ¶ social and political stability in China, especially concerning widening economic ¶ disparities between the richer coastal regions and the poorer regions of the ¶ interior. A national energy security strategy based on clean coal would provide ¶ an opportunity to address this imbalance, which now poses a greater threat to ¶ social and political stability than any other single issue in China. ¶ ¶ Specifically, a national energy security strategy based on clean coal demands ¶ will likely require a significant reallocation of resources from the energy-¶ consuming eastern regions of China to its coal-producing regions in the west. ¶ Such a strategy would entail large-scale investments in research and ¶ development (e.g., gasification technologies, hydrogen production), human ¶ resources (e.g., managerial and technical expertise), and physical facilities ¶ (pipelines and transmission lines)—all of which could create millions of new ¶ jobs. Accelerated development of the interior regions could lead to increased ¶ public revenues to pay for expanded social services and other public goods ¶ such as education and health, thereby elevating the quality of life of the ¶ average citizen. Enhanced environmental quality would also be possible by ¶ virtue of increased public revenues to pay for environmental externalities. ¶ ¶ In all of these respects, investment in a national clean coal infrastructure ¶ would amount to a large-scale public works program, helping to close the ¶ 6 ¶ ¶ ¶ growing gap between the richer coastal and the poorer interior regions of the ¶ country. The pay-off for the coastal regions would be the prospect of cleaner ¶ and more secure sources of electric power and, ultimately, coal-based ¶ transportation fuel supplied from the interior—a prospect that has thus far ¶ proven elusive. By bringing these win-win benefits to both the east and the ¶ west of China, a national energy security strategy based on clean coal could, ¶ in the most optimistic scenario, link the two regions more closely not only in ¶ terms of a shared energy future but also of shared perceptions of economic ¶ prosperity.

### Clean Coal/Development Key

#### Clean coal is key to sustainable development that maintains government rule

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The global environment is the second area where China can help to build a harmonious ¶ world system. Specifically, China should be mobilizing international consensus to form an interna-¶ tional research consortium to develop ways to burn coal cleanly because China is now building a ¶ power station a week and is hence able to facilitate extensive experimentation on prototype plants to ¶ burn coal cleanly. If successful, this global cooperation on clean energy research will unleash sus-¶ tainable development in China as well as in the rest of the world. ¶ We realize of course that while the need to maintain high growth could motivate China to ¶ become more active in supplying global public goods, it might not be allowed to do so however be-¶ cause of the usual reluctance of the existing dominant powers to share the commanding heights of ¶ the world political leadership. The sad experience of Japan being denied permanent membership in ¶ the Security Council of the United Nations is a case in point. Harmonious international relations are ¶ the omitted item in China‟s perception of a Harmonious Society in 2006, and it could turn out to be ¶ a very soft spot in the Chinese growth engine. ¶ Besides the adept management of international relations, the competent management of ¶ economic issues is also fundamental to maintaining China‟s high growth path. The most important ¶ realization on this front is that in today's China, doing more of the same economic policies will not ¶ produce the same salubrious results on every front because the development problems have ¶ changed. For example, in the first phase of economic development, the provision of more jobs ¶ (through economic deregulation) was enough to lower poverty significantly. At the present, many ¶ of the people who are still poor require more than just job opportunities, they need an infusion of ¶ assistance (e.g. empower them with human capital through education and health interventions) first ¶ in order to be able to take up these job opportunities. This is why the poverty rate (defined by a ¶ poverty line of a daily income of US$1) in China has stayed at about 11 percent since 1998. ¶ On the fiscal management front, my analysis suggests two main policy suggestions to re-¶ duce the vulnerability of China to possible future fiscal difficulties. First, the extractive capacity of ¶ the state should be enhanced so that the revenue-GDP ratio would increase to 25 percent in the me-¶ dium term. This extra revenue will be the fiscal cushion that allows the state to accommodate unex-¶ pected expenditure demands or revenue shortfalls. As noted in the paper, the collection of revenue ¶ might probably first require overcoming the challenge of forging the political consensus for a tax ¶ increase. Second, the management of state assets and the regulation of the financial sector should be ¶ reformed to eliminate the phenomenon of repeated recapitalization of the SOBs. The privatization ¶ of some units of the SOBs, and the emergence of large domestic private banks will help in strength-¶ ening the budget constraints perceived by the managers of SOBs. ¶ The fact is, however, that the probability of a software failure and the probability of a ¶ power supply failure are both higher than the probability of a hardware failure. This means that de-¶ velopment policymaking in China has become more challenging. There must now not only be more ¶ adroit, but also fuller accommodation, of domestic social demands in order to keep China‟s growth ¶ rate high. The reality is that popular satisfaction with the status quo depends inversely on the level ¶ of expectations, and the expectations of the Chinese people towards their government have risen ¶ dramatically along with income, and, more importantly, risen along with their growing knowledge ¶ of the outside world. A Chinese government that consistently fails to produce results in line with the ¶ rise in social expectations runs the increasing risk of being challenged by another faction within the ¶ CPC, culminating into an open split with each side seeking the support of non-party groups. ¶ Complicating matters is that there has not been just rising expectations but also diversifica-¶ tion of expectations. In this new situation, the greater use of democratic procedures, the establish-¶ ment of an independent judiciary, and the restoration of a free press might be inevitable if CPC is to ¶ successfully accommodate the rising social expectations and mediate the emerging differences in ¶ social expectations. What will happen will depend on whether the CPC is sufficiently confident that ¶ it will be politically skillful enough to lead the democratic transition and emerge afterward as the ¶ most important political force. History tells us that the French monarchy and the British monarchy ¶ reacted very differently to the popular requests for reform, and the outcomes were very different in ¶ each case.

### Coming Now

#### Economic troubles and political transition make Chinese instability likely – Empirically causes revolts

The Economist, 1-28-12, [“A dangerous year,” <http://www.economist.com/node/21543477>] E. Liu

Strikes have become increasingly frequent at privately owned factories in recent years, often involving workers demanding higher wages or better conditions. Private firms, like state ones, are usually strong-armed by officials into buying off strikers. The thinking is that capitulating keeps a lid on news coverage and helps to prevent unrest from spreading. Yet the explosive growth in the use of home-grown versions of Twitter has made it easy for protesters to convey instant reports and images to huge audiences. The Communist Party's capacity to stop ripples of unease from widening is waning—just as economic conditions are making trouble more likely. Anger at the bottom At a cheap restaurant in Qingbaijiang, opposite a dormitory compound for Pangang employees, grimy steelworkers complain that the government's promise of an extra 260 yuan ($41) a month is hardly enough. Many of the lowest-paid earn as little as $190 monthly. But the workers know that the steel industry is struggling—and that vengeance on persistent troublemakers can be fierce. A police notice warns of legal action, including imprisonment, against any strikers who continue “disrupting public order”. Security agents follow your correspondent in an unmarked car. All this is partly a result of the curb on China's stimulus spending and carefree (reckless, many would say) bank lending in the wake of the global financial crisis of 2008. There are fewer new construction projects; demand for steel has flattened. Pangang's plant in Qingbaijiang is running at a loss. The number of steel firms in the red rose from nine in September to 25 a month later. Even though the government is less worried about inflation now than it was a few months ago, and is releasing the economic brakes a little, the steel industry is expecting a lean period. Some firms might have to close. Overall economic growth is still looking robust. In the final three months of 2011 China's economy grew by 8.9% compared with the same period a year earlier—enviable by almost anyone else's standards, though still the slowest since the second quarter of 2009. The slowdown has so far been gentle, and in line with government efforts to prevent overheating. But this does not stop officials worrying that the coming year could be unusually difficult. Europe is the biggest buyer of Chinese products—and the euro zone's travails have plunged many manufacturers into despair. Depressed demand in both Europe and America has taken its toll on factories. The steelworkers' strike was one of many in recent months, most of them in China's export-manufacturing heartlands near the coast (see map). Chinese exporters do not face as big a shock now as they did in late 2008, when the financial crisis caused a sudden collapse in demand and the loss of as many as 20m migrant-labour jobs. But that time China's recovery was rapid, helped by stimulus spending of 4 trillion yuan (more than $630 billion at today's exchange rate), as well as developed economies' own stimulus projects. The impact on migrant workers was further mitigated by the coincidence of the worst of the downturn with the lunar new-year holiday, when most migrants go home for lengthy periods. This time exporters face protracted slow growth in developed economies, and the risk that the euro zone's difficulties might worsen. China's policymakers do not want another lending spree that might burden the financial system with more bad debt, on top of the borrowing accumulated during the previous binge. The country's relatively low budget deficit (about 2.5% of GDP in 2010) gives it room to spend more on social housing, social security, tax cuts for small firms and consumer subsidies. These could help promote private consumption—eventually. Nerves at the top The long-term plan is for China to wean itself off its reliance on exports and investment projects such as roads, railways and overpriced property developments, and for domestic consumption of goods and services to play a much bigger role in fuelling growth. But this rebalancing will be a long, hard slog. Officials do not want shock therapy because it could threaten the jobs of many of the 160m migrants who come from the countryside to provide the cheap labour behind China's exports. This economic quandary has become more acute at what is a delicate political moment for the Communist Party. Later this year (probably in October or November), the party will hold its five-yearly Congress, the 18th since its founding in 1921, at which sweeping changes in the country's top leadership will begin to unfold. The Congress will “elect” a new 300-member central committee (in fact it will be hand-picked by senior leaders). This will immediately meet to rubber-stamp the appointment of a new Politburo, a body that currently has 25 members. All but two of the Politburo's nine-member inner circle, the Politburo Standing Committee, will be replaced. Two appointments are all but certain: Vice-president Xi Jinping to take over from President Hu Jintao (as party chief after the Congress and as president next March); and Li Keqiang to replace his boss, the prime minister, Wen Jiabao, also next March. There will be much jockeying for the other slots. It is a decade since China experienced a leadership changeover on this scale—and the first time since the late 1980s that the advent of a new generation of leaders has coincided with such a troubled patch for the economy. The previous time, in 1988, an outbreak of inflation threw Deng Xiaoping's succession plans into disarray, giving conservatives ammunition with which to attack his liberal protégés. The party's strife erupted into the open the following year as students demanding greater freedom gathered in Tiananmen Square. The threats to the party today are very different, but fear of large-scale unrest still haunts the leadership. The past decade has seen the emergence of a big middle class—nearly 40% of the urban population, as some Chinese scholars define it—and a huge migration from the countryside into the cities. The party takes no chances. Large numbers of plainclothes police are on permanent watch in and around Tiananmen Square. (Since 2008, visitors to the vast plaza have had to undergo airport-type scanning and searches.) Early last year, when anonymous calls began circulating on the internet for citizens to gather in central Beijing in sympathy with the uprisings that were breaking out in the Arab world, the location specified was not Tiananmen but Wangfujing, a shopping street nearby. The police responded by flooding that area with officers too.

### Ecology Key to Growth

#### Sustainability is key to staying within environmental limits in China – Key to continued growth

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The uncomfortable reality for China is that unless ecological balance is restored within the ¶ medium-term, environmental limits could choke off further economic growth. And the uncomfort-¶ able reality for the rest of the world is that the negative consequences of large-scale environmental ¶ damage within a geographically large country are seldom confined within that country‟s borders. ¶ The continued march of China‟s desertification first brought more frequent sand storms to Beijing ¶ and then, beginning in April 2001, sent yellow dust clouds not only across the sea to Japan and Ko-¶ rea but also across the ocean to the United States. China‟s environmental management is a concern ¶ not only for China‟s welfare but for global welfare as well. ¶ In discussing the environmental aspects of the water transfer plan, it is important to note ¶ that there is now an open controversy in China involving a key government infrastructure project, ¶ and that this controversy is not limited to members of the technocracy. The very public nature of the ¶ controversy and the involvement of more than just scientists, engineers and economists in it reveal ¶ how very far social attitudes have progressed. The important point is that this change in social ex-¶ pectations will require any government in China to live in harmony with nature. However, any gov-¶ ernment will have great difficulties in doing so even if it wants to because a green growth policy ¶ involves a systems approach, and scientific understanding of many ecological sub-systems and the ¶ nature of their interactions is still rather incomplete, ¶ Proper management of the environment has now become critical for China if it is to con-¶ tinue its industrialization process. The unexpurgated version of a 2007 World Bank reported that ¶ "about 750,000 people die prematurely in China each year, mainly from air pollution in large cit-¶ ies"80; and a 2007 OECD study has estimated that "China's air pollution will cause 20 million peo-¶ ple a year to fall ill with respiratory diseases."81 Pan Yue, the deputy head of the State Environ-¶ mental Protection Agency, summed up the present situation in China very well when he said: ¶ “If we continue on this path of traditional industrial civilization, there is no chance that we ¶ will have sustainable development. China's population, resources, environment have already ¶ reached the limits of their capacity to cope. Sustainable development and new sources of energy are ¶ the only road that we can take.”82

### Economy Key – Generic

#### Economic capacity is necessary to sustain political viability

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In turn, the capitalist lawyer, Gordon Chang (2001), predicted that a fiscal crisis could be the trig-¶ gering event in the unavoidable disintegration of socialist China. ¶ This fixation of the doomsayers upon a large negative fiscal shock as a totally destructive ¶ systemic shock is understandable because fiscal imbalance is the proximate cause in most crises. ¶ The reason is that the state budget is often faced with the task of defusing the cumulative tensions ¶ unleashed by deeper, more fundamental social processes. To a first approximation, fiscal capacity is ¶ a fundamental determinant of system stability because economic sustainability depends on the abil-¶ ity to cover production costs, and political viability depends on the ability to reward one‟s support-¶ ers and to pay off one‟s enemies. ¶ The reality in many cases is that fiscal sustainability is the prerequisite for both economic ¶ sustainability and political viability, and that economic sustainability and political viability are in-¶ tricately linked and mutually reinforcing. To see the mutual interdependence of the two, one has ¶ only to recall the many times that near-bankrupt governments have been driven out of power after ¶ raising the prices of a subsidized item like food, petrol, or foreign exchange.6 One could indeed go ¶ so far as to say that the degree of economic and political resilience of a state can be measured by the ¶ state‟s ability to cover an unexpected, prolonged increase in expenditure or an unanticipated, pro-¶ tracted shortfall in revenue.

### Growth Key – Most Probable

#### Growth is key to China stability and new programs to ensure it are necessary to prevent rapid and probable leadership collapse

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What is the origin of the CPC‟s decision to change its primary focus from "economic con-¶ struction" to "social harmony"? And why include a target date of 2020? I believe that this switch in ¶ emphasis from "economic construction" to "social harmony" occurs because the Hu-Wen leadership ¶ is well aware that the political legitimacy of CPC rule rests largely on maintaining, one, an eco-¶ nomic growth rate that is high enough to keep unemployment low, and, two, a growth pattern that ¶ diffuses the additional income widely enough. Specifically, the Hu –Wen leadership recognises ¶ that without accelerated institutional reforms and new major policy initiatives on a broad front, the ¶ 1978-2005 policy framework, which had produced an average annual GDP growth rate of almost 10 ¶ percent, is at odds with environmental sustainability and with international concerns about China‟s ¶ persistent trade imbalances. More importantly, unless their new policies could produce significant ¶ improvements in social harmony by 2020, social instability would reduce China's economic growth, ¶ hence, making the leadership of CPC in Chinese politics unsustainable. ¶ To return to the analogy of China's economy being like a speeding car, the Hu-Wen leader-¶ ship saw that car could crash in the near future because there were several high-probability failures ¶ that might occur and cause an economic collapse. To be specific that there are three classes of fail-¶ ures that could occur hardware failure; software failure; and power supply failure.

## Other Energy

### CBM Solves

#### New technology, especially from the US is key to CBM development that solves a massive gas shortfall which causes overseas expansion now

PwC citing Allan Zhang, director, PwC Sustainability and Climate Change, is a specialist in environmental policy and economics in China, 5-14-12, [“China GreenTech 2012: Shale Gas and Coalbed Methane could meet China’s booming domestic energy demand,” Rowena Mearley, <http://www.ukmediacentre.pwc.com/News-Releases/China-GreenTech-2012-Shale-Gas-and-Coalbed-Methane-could-meet-China-s-booming-domestic-energy-demand-1245.aspx>] E. Liu

Corporate PR Senior Manager, PwC, <http://www.ukmediacentre.pwc.com/News-Releases/China-GreenTech-2012-Shale-Gas-and-Coalbed-Methane-could-meet-China-s-booming-domestic-energy-demand-1245.aspx>] E. Liu

China has maintained its position as the world’s greentech leader despite continuing global economic volatility and slowing domestic growth, with vast unconventional domestic gas reserves, including shale gas and coal-bed methane, potentially easing the country’s energy shortfall.¶ The latest analysis by The China Greentech Initiative (CGTI) - The China Greentech Report 2012 - reports that while the greentech sector faces macroeconomic challenges, China’s overwhelming need for energy and environmental technology will continue to propel rapid growth in greentech markets. ¶ The report cites China’s “urgent” needs in energy and environment driving developments. The country now imports over half of its oil, in addition to its over-reliance on coal, producing high emissions of carbon and other air and water pollutants. ¶ China’s domestic conventional gas production is described as “stretched to the limit”, but vast unconventional domestic gas reserves, including shale gas and coal-bed methane, could ease China’s gas shortfall, which is expected to grow nine-fold by 2015. The industry would however need to overcome major pricing, regulatory, distribution and water challenges. ¶ Allan Zhang, director, PwC Sustainability and Climate Change, is a specialist in environmental policy and economics in China. He commented:¶ “The basic fact is that to ensure energy security and supply, China has no choice but to develop and use new forms of energy to meet the growing and seemingly insatiable demand. Technological advances over the years have made wider use of unconventional gases possible, and opened up new sources of energy supply, although many technical hurdles still exist. ¶ “Companies with experience of advanced technologies, or management skills in exploring Coalbed Methane projects on a large commercial scale will be in a great position in the market. The lack of experience and know-how of the Chinese companies in dealing with unconventional energy such as shale gas offer the European and American companies the chance of riding on China's rapid development.”¶ Other findings from The China Greentech Report 2012 include:¶ Private equity and venture capital investments in China’s private water sector increased from $US 50 million in 2010 to US$ 400 million in just the first four months of 2011 ¶ Wind and solar farms costs have fallen dramatically: onshore wind farms in China can now be completed for around RMB 7000/kW and photovoltaic (PV) system costs have decreased from RMB 74,000/kW in 2007 to less than RMB 13,000/kW in late 2011 with costs continuing to drop ¶ Though China’s green building market is small, building energy efficiency policies will likely lead to rapid industry expansion over the next five years¶ China began the Construction Phase of its 2009-2020 Strong and Smart Grid Plan in 2011, initiating the world’s largest effort to build a reliable, efficient and smart grid.¶ Given the scale and rapid growth of China’s energy needs, to secure its energy supply, China has continued an earlier trend of overseas expansion, with companies going abroad for energy deals in the areas of oil and renewable energy. The deals in 2011 also highlighted a new push for investing in basic infrastructure, such as European water and power grid utilities, to achieve asset diversification and financial returns.

#### Overcoming barriers to CBM in China is key to meeting gas demand

China Greentech Initiative, an ¶ international commercial collaboration platform of 150 companies and ¶ organizations active in China’s greentech markets, consists of more than 500 senior decision makers coming from 100+ commercial and policy organizations, 5-12, [“The China Greentech Report 2012,” [www.china-greentech.com/report](http://www.china-greentech.com/report)] E. Liu

Unconventional gas, including coal-bed methane (CBM), coal-mine methane ¶ (CMM) and shale gas, could become a major contributor to China’s energy ¶ mix, given the large potential supply and environmental benefits. ¶ Although natural gas is an economically-viable and practical bridge to a low-carbon ¶ economy, China’s domestic conventional gas production is stretched to the limit. ¶ Fortunately, China has vast undeveloped unconventional gas resources, primarily CBM ¶ and shale gas. If the industry can overcome major pricing, regulatory, distribution and ¶ water challenges, China could increasingly rely on unconventional gas production to ¶ meet its booming domestic demand.¶ Unconventional gas could help ease China’s domestic gas supply shortfall¶ China’s natural gas shortage reached 10 billion m3 in 2010, up from 4 billion m3 in ¶ 2009.32 The shortage is estimated to grow nine-fold to 90 billion m3 in 2015, or 25% ¶ of expected domestic consumption.33 Pipeline imports from Kazakhstan, Turkmenistan ¶ and Russia, along with costly imports of liquefied natural gas (LNG) from Qatar, ¶ Indonesia and Australia could fill the gap. The main trend causing the shortage is rising ¶ urban gas consumption as gas distribution infrastructure expands. Whereas in 2003 ¶ only 60 cities had gas distribution networks, 270 cities had such networks by 2010.34 ¶ City gas demand represented 34% of China’s total gas consumption in 2008, up from ¶ 18% in 2000.35 Gas demand from the power industry also increased over the last 10 ¶ years, reaching a 12% share, up from just 4% in 2000.36 Despite starting from a much ¶ lower base, the transportation sector is expected to increase its reliance on natural ¶ gas as an alternative fuel. In 2010, there were 550,000 compressed natural gas (CNG) ¶ vehicles on the roads, and over the next 10 years CNG/LNG fueling is expected to ¶ expand from 1,400 stations to 12,000 stations.37 ¶ China has vast unconventional gas reserves that can help to address the country’s ¶ gas supply shortage. At 37 trillion m3 (equivalent to 1,306 trillion cubic feet), China is ¶ estimated to have the world’s third-largest CMM and CBM gas resources after Russia ¶ (113 trillion m3) and Canada (74 trillion m3). China’s resources are larger than those of ¶ the U.S. (21 trillion m3), where unconventional gas production has expanded eight-fold ¶ in the past decade and now accounts for over 14% of total U.S. production.38 China’s ¶ CBM and CMM resources are located in prime coal basins: 60% of the total is in Qinshui ¶ (Shanxi), Ordos (Inner Mongolia) and Junggar (xinjiang), of which 7.4 trillion m3 are ¶ considered recoverable.39 Estimates of China’s total shale gas resources range widely, ¶ and exploration is at an early stage. According to some projections, shale gas could ¶ represent 10-14 times China’s proven conventional gas reserves, but well characteristics ¶ and productivity vary across gas plays, explaining the uncertainty in national shale gas ¶ resource estimates.40¶ Overall, expectations of rising consumption paired with constrained conventional ¶ resources, and vast unconventional resources suggest a bright future for CBM/CMM ¶ and shale gas, provided challenges can be overcome.

### CCS Injection Solves

#### CCS injection solves natural gas – It provides enough gas for over 200 years

Hongguan Yua, School of Chemical and Environmental Engineering, Shandong University of Science and Technology, et al., Guangzhu Zhou, Weitang Fan, Jianping Ye, 11-29-06, [“Predicted CO2enhanced coalbed methane recovery¶ and CO2sequestration in China,” International Journal of Coal Geology 71 (2007) 345–357, <http://www.math.oregonstate.edu/~mpesz/download/coal/Yu_2007ECBM_CHINA.pdf>] E. Liu

(1) The factors obtained with technical analysis and¶ basic case assumptions are reasonable and can be¶ used to study the CBM potential of primary¶ production, and the CO2sequestration capacity¶ and enhanced CBM recovery potential of Chinese¶ coal beds.¶ (2) Of the total CBM resources of 9.256Tm3in the¶ coal reservoirs with more than 4 m3/t of methane¶ content and less than 1500-m depth in four CBM¶ provinces and 29 CBM zones, 3.357Tm3CBM¶ can be recovered with primary CBM production,¶ accounting for 36.26% of the total resources less¶ than 1500-m depth, in which the main contribu-¶ tors are Qinshui and Eastern Yunnan–Weastern¶ Guizhou.¶ (3) As a whole, the ECBM recovery potential asso-¶ ciated with CO2sequestration is estimated to be¶ over 3.751Tm3, of which about 2.223Tm3of¶ ECBM potential is indicated with less than 1500-m¶ depth if 5.899Tm3remained resources is used to¶ CO2-ECBM, and about 1.528Tm3CBM can be¶ recovered within the 1500-m to 2000-m depth¶ intervalwithCO2-ECBM.Themajordevelopment¶ provinces to CBM potential include the North¶ China and south China CBM-province, and the¶ main contributors of ECBM include Qinshui,¶ Eastern Ordos in North China, and Eastern¶ Yunnan–Western Guizhou in south China.¶ (4) The CO2sequestration capacity of China coal¶ beds is estimated to be about 142.67Gt, of which¶ 86.84Gt CO2could be sequestrated into coal beds¶ with less than 1500-m depth, and 55.83Gt could¶ be stored into coal seams within the 1500-m to¶ 2000-m depth interval. The main contributors of¶ CO2sequestration are Qinghai, Eastern Ordos and¶ Eastern Yunnan–Weastern Guizhou CBM zone.¶ (5) China CBM resources can produce 218 years and¶ 86 years production demand of natural gas with¶ primary CBM and CO2-ECBM production,¶ according to natural gas production in 2002 and¶ forecasted production of natural gas in 2015.¶ Chinese coal seams could sequestrate over¶ 50 years of CO2quantity at the emission level¶ of CO2 in 2000, and store 26 years of CO2¶ emissions forecasted in 2020. About 6.4Gt CO2¶ emission decreases with total CBM production¶ potential obtained by primary production of CBM¶ and enhanced CBM using CO2injection.

### Coal Prevents Diversification

#### China’s developing oil and gas now because of constraints on coal growth

Flynt Leverett, senior fellow at the Saban Center for Middle East Policy at The¶ Brookings Institution and Jeffrey Bader, director of the Brookings China Initiative, Winter 05, [“Managing China-U.S.¶ Energy Competition,” The Washington Quarterly • 29:1 pp. 187–201, <http://www.masteruniteramo.it/pdf/articoliesaggi_perautore_pdf/leverett-bader_cina%20in%20medio%20oriente.pdf>] E. Liu

Rising energy demand in China is prompted by a variety of factors, in-¶ cluding industrial expansion and transportation growth. Most of China’s to-¶ tal energy demand will continue to stem from industrial activities requiring¶ ever more electricity. Although coal will remain the dominant fuel source¶ for power generation in the foreseeable future, limitations on China’s ability¶ to expand its use of coal imposed by technical shortcomings, as well as infra-¶ structure and transportation constraints, mean that the percentage of¶ China’s electrical power generated by oil- and gas-fired plants will increase¶ in the near term. Beyond the power sector, the fastest-growing use of energy¶ in China is for transportation, driven by an automobile market that is one of¶ the country’s foundational growth sectors. This trend will inevitably sharply¶ raise the percentage of the country’s overall energy needs that must be met¶ through hydrocarbon fuels. China’s automobile market is expected to be-¶ come the world’s second-largest within a decade, a development that on its¶ own would ensure robust growth in demand for oil. China now has about 23¶ million cars; Sinopec executives estimate that there will be 130 million cars¶ in the country by 2030.8

### Coal Transition Now

#### China’s on a forced transition from coal now – Cleaning it up is key

Bloomberg, 4-3-12, [“China Beats U.S. With Power From Coal Processing,” John Lippert and Chua Baizhen, <http://www.bloomberg.com/news/2012-03-27/china-beats-u-s-with-power-from-coal-processing-trapping-carbon.html>] E. Liu

‘Green Transition’ ¶ Pollution from plants that use coal to make fuel and chemicals is one reason why China fell short last year in progress toward its pledge to cut greenhouse gases, she says. Such plants, built in the desert, also strain water supplies, she says. ¶ China needs more renewable energy for generating electricity, not more coal, Li says. ¶ “A green transition is something every country will face,” Li says. “Letting it happen faster will benefit China in every possible way.” ¶ China’s biggest effort to reduce the impact of using coal to make electricity is taking shape in Tianjin, 70 miles southeast of downtown Beijing. The final touches are being put on the $1 billion GreenGen plant for its planned midyear opening. ¶ GreenGen uses a process called integrated gasification combined cycle, or IGCC. It heats coal to form a chemical mix called syngas and sends that to a gas turbine to make electricity. Leftover heat goes to a steam turbine in a second step. ¶ Keeping Coal Viable ¶ Electricity from early IGCC plants is expensive, at $175 per megawatt-hour, says Kieron Stopforth, a Bloomberg New Energy Finance analyst in London. That compares with $139 at traditional coal-fired plants that capture carbon and $72 at conventional plants that release carbon. Costs will drop as IGCC technology matures, Stopforth says. ¶ Shanghai Electric, which built GreenGen’s steam turbines, plans to make gas turbines for 24 new IGCC facilities each year. That would create more gasification plants generating power from coal in one year than the total number that existed or were planned globally in 2010. ¶ GreenGen may set off a wave of government approvals for the plants across China, Clean Air Task Force’s Sung says. ¶ Duke Energy is keeping tabs on GreenGen as the U.S. struggles to maintain coal as a viable electricity source. ¶ ‘Harder to Use Coal’ ¶ Duke has almost completed a 618-megawatt IGCC plant in Edwardsport, Indiana, using gasifiers designed by General Electric Co. and built in China by Hangzhou Boiler Group (002534). At $3.3 billion, it’s about $1 billion more than the original estimate. Duke altered the design, including making gasifiers taller for better maintenance. In some cases, engineers underestimated how much piping they’d need, raising costs. Even so, plant manager Jack Stultz says IGCC technology will shape coal’s future. ¶ “Most regulations that are current or pending make it harder to use coal,” he says. “If we can’t do it here, coal’s life expectancy gets pretty short.” ¶ Yashentech’s Chuan and Wang say China will need to burn coal far into the future, creating opportunities for their company and others focused on cleaning it up. ¶ During the 2008 financial crisis, the couple took pay cuts and pledged their California home as collateral for loans to keep the company afloat. Today, there’s more interest. San Francisco-based Nth Power LLC is providing startup investments, following an original backer, Palo Alto, California-based Firelake Capital Management LLC. Yashentech is also trying to land Chinese government grants. ¶ Pollution-Weary Chinese ¶ “In China, we get lots of support from the people, politicians and moneymakers,” Chuan says. ¶ Wang, explaining the science behind his soot-reducing discovery, says the dimethyl carbonate his catalyst extracts from a derivative of coal is important because it’s rich in oxygen. That makes combustion more efficient, reducing carbon when diesel buses belch pollution. ¶ Yashentech produces dimethyl carbonate for $730 a ton, or 36 percent less than rivals, he says. ¶ Wang hopes that in 10 years, vehicles across China will run on sootless diesel, trimming carbon emissions 3 percent. That alone won’t stop global warming. But Wang says it will lift the hearts of pollution-weary Chinese whenever they step behind a bus and don’t get blasted by foul air. ¶ China’s paucity of oil and natural gas and the slow commercialization of renewable energy mean the country may never kick its coal habit. ¶ But with entrepreneurs such as Chuan and Wang, companies that are focused on curbing pollution and government making it imperative to do so, China is stepping forward in the race to tame a dirty fuel the world still can’t live without.

### Coming Now – CCS Key

#### Investment in CBM is coming now but recovery is limited – CCS gas is key to increase it

Hongguan Yua, School of Chemical and Environmental Engineering, Shandong University of Science and Technology, et al., Guangzhu Zhou, Weitang Fan, Jianping Ye, 11-29-06, [“Predicted CO2enhanced coalbed methane recovery¶ and CO2sequestration in China,” International Journal of Coal Geology 71 (2007) 345–357, <http://www.math.oregonstate.edu/~mpesz/download/coal/Yu_2007ECBM_CHINA.pdf>] E. Liu

China has abundant coalbed methane resources with¶ CBM reserves estimated at 30 to 35Tm3(Zhang et al.,¶ 1991). The average theoretical recovery ratio of CBM¶ with conventional techniques is estimated to be 27% in¶ China (Fu et al., 2000), and it is affected by the¶ permeability of the coal bed, the methane saturation, the¶ well spacing, and the recovery method. In recent years,¶ CBM exploration and development have been very¶ active in China. China has mastered the basic geological¶ theories and exploration methods of CBM. Especially in¶ the areas that are suitable for developing CBM,¶ breakthroughs have been made in optimum selection,¶ unbalanced drilling techniques, and reconstruction of¶ reserve layers. As for CBM exploration, China has¶ drilled 287 special CBM test wells from the 1980s to¶ 2004 (Sun, 2005). In the past, one important reason that¶ China lagged behind in developing CBM was that there¶ was no sound network of natural-gas trunk pipelines.¶ With the establishment of a pipeline system used to¶ transport natural gas from west China to east China, this¶ problem will be substantively solved.¶ Although China is not subject to any emissions¶ reduction target under the Kyoto Protocol's first emission¶ control period, China is currently the second largest¶ energy consumer and greenhouse-gas emitter. Continued¶ rapid economic development will increase greenhouse¶ gases (GHGs) emissions. Forecast shows that the gross¶ CO2emissions amount of China will surpass that of the¶ UnitedStatesby2025,thusbecomingtheworldfirst.The¶ CO2emissions amount per capita in China, currently¶ maintained below the world average, will reach this¶ benchmark by 2025. Although such a result remains¶ below the CO2emissions amount per capita of developed¶ countries, China will lose the advantage of low CO2¶ emissions, which will confront China with great pressure¶ from the international community in the Protocol age. As¶ a result, the identification, evaluation and adoption of¶ suitable techniques to reduce CO2emissions in China are¶ an important research topic to support policy making.¶ Underground storage of GHGs is one of several¶ possible methods to reduce CO2 emissions to the¶ atmosphere.Coalseamsprovideoneofthemostattractive¶ sites due to the huge coal resources in China and the fact¶ the CO2adsorption into coal is high. On the other hand,¶ injected CO2into coals displaces the adsorbed methane¶ from the coal surface. The injection of CO2 in coalbeds¶ can enhance the recovery of coalbed methane (ECBM)¶ and at the same time it is a very attractive option for¶ geologic CO2storage as CO2is strongly absorbed onto¶ the coal. CO2-ECBM not only enhances CBM recovery,¶ but also sequestrates CO2(Mavor et al., 2002).

### Cooperation Prevents Oil Consumption

#### Cooperation on clean coal is key to reduce China’s oil reilance

Flynt Leverett, senior fellow at the Saban Center for Middle East Policy at The¶ Brookings Institution and Jeffrey Bader, director of the Brookings China Initiative, Winter 05, [“Managing China-U.S.¶ Energy Competition,” The Washington Quarterly • 29:1 pp. 187–201, <http://www.masteruniteramo.it/pdf/articoliesaggi_perautore_pdf/leverett-bader_cina%20in%20medio%20oriente.pdf>] E. Liu

It is imperative for the United States to develop a strategy for managing¶ these challenges in the near term so that they do not escalate unduly in the¶ medium-to-long term. It will not be possible for the United States to ex-¶ clude China from the region, even if that were judged a desirable objective¶ of U.S. policy. China will not stop its drive¶ for energy resources in the Middle East, and¶ Middle Eastern energy producers will not¶ follow exhortations from Washington to cut¶ off China. The smarter and potentially more¶ successful U.S. policy would be to try to¶ work with China to give it both a sense of¶ energy security and a shared interest in a¶ stable Middle East.¶ For energy security, the goal of U.S. policy¶ should be twofold. First, Washington should initiate active cooperation with¶ Beijing to help it implement policies and programs that would reduce China’s¶ demand for hydrocarbons. The more that China is able to use alternative¶ sources of energy to generate power, such as nuclear energy and “clean”¶ coal, in which U.S. companies enjoy a technological edge, the less it will¶ need imported petroleum. In particular, the United States should modify its¶ export control and related policies to facilitate the transfer of nuclear tech-¶ nology to China. China is seeking to construct up to 40 nuclear power¶ plants by 2020. As a result of unilateral U.S. sanctions on nuclear transfers¶ to China from 1989 to 1998, subsequent delay in negotiating a new frame-¶ work for nuclear cooperation till 2002, and continued ambiguity by Wash-¶ ington in response to U.S. nuclear suppliers seeking to sell to China, the¶ United States has effectively dealt itself out of China’s nuclear market to¶ the benefit of France, Japan, and Russia. Helping China increase its nuclear¶ energy supply would not only provide commercial benefits to U.S. suppliers¶ but would also decrease, at least on the margins, China’s demand for oil im-¶ ports. Helping China use its abundant coal resources more efficiently¶ through the provision of clean coal technology would also decrease the por-¶ tion of the country’s petroleum imports going toward power generation and¶ improve China’s air quality.

### Diversification Now – Greeness Key

#### CO2 impact of coal is causing China to diversify energy resources now

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While coal output, transportation capacity, and mine safety can be improved gradually, ¶ the environmental impact of massive coal use is irreversible and devastating. Coal use is ¶ responsible for as much as 90 percent of China’s sulfur dioxide emissions and 50 percent of its ¶ particulate emissions (Economy, 2007). Coal-generated air pollution has contributed to a recent, ¶ sharp rise in the number of people suffering from respiratory illness caused by particulates. ¶ Sulfur dioxide discharged from plants has increased acid rain that has reportedly damaged soil ¶ quality across one-third of China’s landmass; and in 2005, acid rain fell in more than half of the ¶ 696 cities and counties under air-quality monitoring (Reuters News, 2006). ¶ The environmental effects of China’s heavy coal use are not China’s problem alone. Acid ¶ rain is already a regional problem in China, South Korea, and southwest Japan (Streets et al., ¶ 1997). The government estimates that the costs of environmental damage from coal mining, ¶ including wasted resources, environmental pollution, ecological destruction, and surface ¶ subsidence, total about RMB 30 billion per year (IEA 2009a). In addition, carbon dioxide ¶ emissions are impacting global climate. Studies show that China overtook the United States as ¶ the largest emitter of carbon dioxide in 2009. According to the Intergovernmental Panel on ¶ Climate Change (IPCC), to avoid severe and irreversible consequences to the climate, nations ¶ need to stabilize the atmospheric concentrations of carbon dioxide at 550 ppmv (double the pre- ¶ industrial level) or even 450 ppmv by 2050. To reach that goal, reductions in annual carbon ¶ dioxide (CO2) emissions need to begin by 2020. China has ratified the Kyoto Protocol so it ¶ should be trying to reduce carbon emissions even if the treaty does not mandate reductions for ¶ developing countries. In addition, China set as a goal to cut CO2 emissions intensity by 40–45 ¶ percent below 2005 levels by 2020 as part of the agreement to emerge from the 2009 United ¶ Nations Climate Change Conference. So far, though, China has failed to lower the environmental ¶ costs of its economic growth (SEPA, 2006). Without stronger and more effective measures, ¶ China will also fail to achieve the environmental goals of its 11th Five-Year Plan, which is to ¶ reduce by 10 percent the emission of major pollutants by 2010. ¶ The sum of these challenges—the rapidly increasing demand for coal, transportation ¶ constraints, coal cost increases, and environmental costs—are driving China to diversify ¶ energy resources and to pursue comprehensive energy conservation and efficient energy use.

### Gas Coming Now

#### Massive increases in China gas consumption and demand are coming now

Sarah O’Hara, Professor of Geography, School of Geography, University Park, University of Nottingham and Hongyi Lai, Associate Professor, School of Contemporary Chinese ¶ Studies, International House, Jubilee Campus, Nottingham¶ , 11, [“China’s “Dash for Gas”: Challenges and ¶ Potential Impacts on Global Markets,” Eurasian Geography and Economics, 2011, 52, No. 4, pp. 501–522, bellwether.metapress.com/index/J56R74667128X480.pdf] E. Liu

Historically, natural gas has not been a major energy source in China, and at less than ¶ 4 percent of the country’s energy mix it is significantly lower than the global average of 24 ¶ percent (BP, 2010). However, natural gas is one of a number of resources that has been given ¶ “critical” status for China’s future economic growth (CSES, 2010) and plans to increase the ¶ use of natural gas were first set out in China’s Ninth Five-Year Plan (1996–2000; Yamaguchi ¶ and Cho, 2003) and reiterated in subsequent plans. According to China’s Twelfth Five-Year ¶ Plan (2010–2015), natural gas will account for 8 percent of the country’s total energy con-¶ sumption in 2015 (China to Double, n.d.) and in the process the country will have overtaken ¶ Japan as the major natural gas consumer in the Asia-Pacific region.7 The Chinese government ¶ further anticipates boosting the share of natural gas as part of total energy consumption to 10 ¶ percent by 2020 (e.g., see Higachi, 2009; Thomson and Horii, 2009, p. 651).¶ In this paper, we provide an overview of the past, present, and future use of natural gas ¶ in China together with information on how natural gas use will develop in different sectors. ¶ We then discuss in detail China’s estimated reserves of natural gas and its potential of devel-¶ oping these resources over the next 25 years. Finally we consider how China will fill the gap ¶ between production and consumption of natural gas before providing an assessment of the ¶ impact that China will have on global gas markets in the short, medium, and longer term.¶ NATURAL GAS USAGE IN CHINA CURRENT AND FUTURE PROJECTIONS¶ Despite significant known reserves of natural gas, factors such as distance to market, lack ¶ of infrastructure, and cost relative to coal have limited natural gas usage in China; until quite ¶ recently it has tended to be used either as a local fuel or as a feedstock in chemical fertilizer ¶ production (Higashi, 2009). As recently as 2000 the proportion of gas in the country’s energy ¶ mix was less than 2 percent (Natural Gas, 2010), with annual usage of the order of 0.5 trillion ¶ cubic feet (tcf). The push by the Chinese government to increase natural gas usage resulted ¶ in a more than quadrupling of gas consumption between 2000 and 2010. Current estimates ¶ suggest that China’s annual demand for natural gas will grow faster than any other country, ¶ averaging 6 percent annually over the next 25 years; China is expected to account for 22 ¶ percent of the increase in global gas demand over this period (EIA, 2010). By 2035 demand ¶ for gas in China will be nearly 10 tcf, by which time the country will rank third among global ¶ gas consumers (ibid.; Fig. 2).¶ 7This assessment is likely to change in the wake of the March 11, 2011 earthquake and tsunami that devastated ¶ vast areas of Japan’s eastern coast. The impact on some of Japan’s nuclear facilities, most notably the Fukushima ¶ Daiichi plant, is likely to have major repercussions for Japan’s nuclear energy industry, a major energy source for the ¶ country. It appears that Japan’s demand for natural gas will inevitably increase in the short to mid-term. Moreover, ¶ Japan may not be the only country in which gas demand may increase, as many countries (including China; see ¶ Thomson, 2011 in this issue) review their nuclear policies and/or at least temporarily postpone construction of new ¶ facilities. ¶ China’s natural gas usage is expected to increase across all sectors of the economy. The ¶ industrial sector is and will continue to be the biggest user of natural gas; over the next 25 ¶ years it will increase its natural gas consumption from 1.4 to 4.7 quads, with gas accounting ¶ for 4.3 and 8.8 percent of total fuel use in 2007 and 2035, respectively. It is in the residential ¶ sector, however, that the most dramatic changes will be seen. In 2007 natural gas accounted ¶ for 15 percent of the energy use in the residential sector, but this is forecast to increase to 27 ¶ percent by 2015 and 50 percent of all use by 2035. Notwithstanding this increase, gas use in ¶ the residential sector will account for less than 35 percent of total natural gas usage compared ¶ to nearly 50 percent for the industrial sector. Significantly, despite the huge effort by the ¶ Chinese government to convert public transport to cleaner fuels such as compressed natural ¶ gas, the actual amounts used is and will continue to be negligible (Table 2).8

### Gas Gap Coming Now

#### Chinese gap in gas production and consumption is increasing now – Unconventional sources are key to close it, but they’re slow now

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Over the next decade there is likely to be a significant gap between the demand and ¶ production of natural gas in China and by 2020 the country could be dependent on imports ¶ for nearly 50 percent of its needs (Fig. 5; CSES, 2010). However, if the Chinese government ¶ is to achieve its target of gas accounting for 10 percent of the energy mix, the gap will be ¶ even greater. Although some analysts anticipate that China’s gas gap will narrow after 2020 ¶ as unconventional sources come on stream, in the short to medium term China will need to ¶ source significant additional supplies to meet its needs. Indeed the 2010 International Energy ¶ Outlook suggests that China will still be importing 43 percent of its gas needs by 2035 (EIA, ¶ 2010). As part of its strategy, China has signed large long-term contracts with various gas-¶ producing countries to provide it with gas via pipeline and LNG; in 2009 it became the first ¶ Asian country to import both LNG and gas via pipeline (Natural Gas, 2010)

### Nuclear Power – Comes Fast

#### Capital and industry means nuclear power can be rapidly deployed in China

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The development of additional nuclear energy capacity in China promises to overcome many of ¶ the barriers that confront the energy sources discussed above. Though China’s reliance on ¶ nuclear energy has been limited to date, it has built an extensive industrial base of nuclear and ¶ technical capabilities that is poised to support substantial growth. ¶ China built its first heavy water research reactor and cyclotron in 1958 and connected its ¶ first indigenously designed, constructed, and managed pressurized water reactor to its electricity ¶ grid in 1991. Since then, nuclear power growth has been slow. In 2004, China’s nuclear power ¶ plants produced only 50.4 TWh of electricity, accounting for 2.3 percent of national generation. ¶ In comparison, South Korea’s and Japan’s nuclear power sectors account for 40 percent and 30 ¶ percent, respectively, of total electricity generation. ¶ In contrast to other potential energy sources, nuclear reactors are a fully developed and low-¶ carbon emission electricity generating option that has the potential for large-scale expansion. Despite ¶ the large cost of nuclear power plants, China’s booming economy has helped to ensure enough capital ¶ investment for planned projects. The ongoing global finance crisis has affected China, but it did not ¶ decrease Chinese investment in nuclear energy development. Instead, the government has increased ¶ the amount of financial aid and guaranteed loans for the nuclear industry. China has not participated ¶ any international nuclear liability regime, but China set up its nuclear insurance pool in 1999, which is ¶ a community comprising 15 major non-life insurance companies and four reinsurers. ¶ Nuclear power could be cost competitive with other forms of electricity generation, except ¶ where utilities have direct access to low-cost fossil fuels, such as coal and natural gas. Yes, the cost of ¶ building nuclear power reactors is relatively high, but the operating costs are relatively low. ¶ Additionally, nuclear fuel costs are a minor portion of total generating costs, while they make up 40 ¶ and 60 percent of costs for coal-fired and LNG plants, respectively. This insulates the price of ¶ electricity generated from nuclear reactors to fuel price escalation. Standardized designs, shorter ¶ construction times, and high capacity factors have also lowered reactor construction costs to the point ¶ that even without environmental subsidies, nuclear reactors can be competitive with other power ¶ options over the their operating lifetimes (WNA, 2008). For example, when the price of coal for power ¶ generation reaches 400 Yuan/Ton, domestically designed nuclear power plants with construction costs ¶ of $1,300 per kilowatt could compete economically with coal-fired power generation in China’s ¶ coastal regions, regions that don’t have direct access to coal resources (Wen, 2005). The Westinghouse ¶ AP1000 design follows the simplification principle by decreasing the number of components, ¶ including pipes, wires, and valves, which helps to reduce the time and cost of construction. This ¶ simplification is one of the major reasons that Westinghouse won its bid in 2005 to construct two ¶ nuclear power plants in Sanmen and Haiyang, China.1 Of course, no vendor can guarantee that new ¶ and more standardized designs can be built at a lower cost than previous designs. If China’s AP1000 ¶ project succeeds, it would be a good demonstration of the economic advantages of standardization and ¶ serial construction. Environmental subsidies and related policies, such as a carbon dioxide tax, could ¶ be introduced in China, which would make nuclear power even more economically competitive.

### Nuclear Power – Comes Now – Greeness

#### China’s committed to nuclear power now to meet emissions caps

China Greentech Initiative, an ¶ international commercial collaboration platform of 150 companies and ¶ organizations active in China’s greentech markets, consists of more than 500 senior decision makers coming from 100+ commercial and policy organizations, 5-12, [“The China Greentech Report 2012,” [www.china-greentech.com/report](http://www.china-greentech.com/report)] E. Liu

Nevertheless, the government has reiterated its long-term commitment to nuclear ¶ power and likely will resume project approvals in 2012 with an emphasis on third-¶ generation technology—which includes more passive safety design features and ¶ improved fuel technology—and higher safety standards. China considers nuclear ¶ power essential to meeting stringent carbon emission reductions and increasing ¶ environmental protection. Zhang Guobao, former head of NEA, has publicly stated ¶ China will not abandon nuclear power, deeming it critical for meeting China’s 15% non-¶ fossil fuel energy mix target by 2020.30 China’s Nuclear Safety Plan is in the approval ¶ process and NEA is drafting a Mid- and Long-Term Plan on Nuclear Power. In 2012, ¶ the government will likely confirm its commitment to 40 GW of nuclear capacity by ¶ 2015 and 75 GW by 2020. But even then, nuclear power will still only account for ¶ less than 5% of total installed capacity. China will also accelerate the adoption of third ¶ generation technology, especially the AP-1000 developed by Westinghouse, not only ¶ for safety reasons, but also because China plans to export nuclear equipment with the ¶ CAP-1400 model derived from the AP-1000. Meanwhile, the Chinese government is ¶ working to improve other areas of nuclear oversight, including emergency response ¶ systems, public awareness, education of nuclear professionals, safety standards and ¶ monitoring.31

## Other

### CCS Key to Climate Commitment

#### Large-scale CCS including pipelines is key to show US commitment on climate

David Wendt, co-founded the Jackson Hole Center for Global Affairs in 2002 and has ¶ been its president since that time, leader in a U.S. bicentennial program on global interdependence at the World ¶ Affairs Council of Philadelphia (1975-77); a program on global health, population, and ¶ environmental issues at the Center for Strategic and International Studies, in ¶ Washington, D.C. (1977-98); and the international program of Idaho State University, in ¶ Pocatello, Idaho (1998-2006), 8-08, [“CLEAN COAL: ¶ U.S.-CHINA COOPERATION ¶ IN ENERGY SECURITY,” EastWest Institute, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?ots591=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&lng=en&id=104337>] E. Liu

Many other steps then need to follow. These include characterization of the ¶ proposed underground storage sites through geological surveys and analyses, ¶ computer simulations, and so-called measurement, monitoring, and validation ¶ (MMV) through pilot projects and other technical demonstrations. All this ¶ research and demonstration needs to be conducted on a site-by-site basis, ¶ taking into account varying conditions and circumstances. In addition, ¶ 10 ¶ ¶ extensive public policy work is needed to build a regulatory regime addressing ¶ such issues as liability and property ownership and to build public acceptance ¶ and support for the approach of CCS in general. Then, before full-scale CCS ¶ can be undertaken, a network of pipelines needs to be developed to transport ¶ the carbon dioxide to the designated sites from its points of origin. ¶ When all of these steps are considered in the aggregate, it is clear that nothing ¶ approaching the necessary level of national effort is currently being ¶ undertaken to build a comprehensive system of CCS addressing the country’s ¶ power production and carbon reduction needs. The IGCC plants (complete ¶ with the necessary carbon-capture capabilities) are not being built. The funds ¶ are not being allocated to research and development to support the trial-and-¶ error process of site preparation and development. And, most importantly, a ¶ system of economic incentives has not been put into place to make it ¶ prohibitive for industry—and, by extension, consumers of electric power—not ¶ to make these necessary investments. ¶ In short, CCS has not been made a national priority. The true test of the U.S.’s ¶ seriousness about climate change will be its commitment to a system of ¶ legislation, budgets, program plans, and management tools—like the ¶ Manhattan project of the 1940s or the Apollo project of the 1960s—¶ commensurate in scale to the magnitude of the challenge.

### China Interest in CCS Now

#### China’s interested in CCS technologies but uncertainty and slow development block it

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Advanced-Coal and Decarbonization Technologies. In recent years, the Chinese ¶ government has improved its advanced coal technological capabilities, including clean coal ¶ power technology, pollution-control technology, coal gasification technology, coal liquefaction ¶ technology and coal gasification-based co-production technology and deployed certain ¶ technologies, such as pollution-control technologies. For example, the total installed capacity of ¶ flue gas desulfurization technologies increased from 53 GW in 2005 to 270 GW in 2007, ¶ accounting for more than 50 percent of total installed thermal power capacity (Wang et al., 2008). ¶ However, the development and deployment of coal gasification, coal liquefaction and coal ¶ gasification-based co-production technologies are still very limited due to weak technological ¶ innovation capabilities. In addition, due to insufficient regulation enforcement and lax emission ¶ standards in China, the deployment of pollution-control technologies did not necessarily control ¶ the increase of pollutant emissions. For example, even though a lot of flue gas desulfurization ¶ units have been installed in coal-fired plants, it is not clear that the equipment is always in ¶ operation (Zhao and Gallagher, 2007). Enforcing regulations and standards, raising regulatory ¶ standards, and improving monitoring measures remain huge challenges. Since coal will continue ¶ to dominate China’s energy mix for decades, decarbonization technologies cannot be ignored as ¶ a part of the solution. Innovative decarbonization technologies are well understood but have yet ¶ to be demonstrated together at commercial scale. The cost of capturing, transporting, and ¶ disposing of carbon dioxide is still high, and the environmental impacts are largely unknown. ¶ Decarbonization technology is still a far way from the deployment stage. Liu and Gallagher ¶ (2009) briefly described three phases for the development and deployment of carbon capture and ¶ storage (CCS) technology in China. By 2020, pilot-scale demonstration projects should start up, ¶ and early commercial deployment might be possible. By between 2020 and 2030, CCS could be ¶ a commercialized technology for an emerging low-carbon economy. Beyond 2030, the adoption ¶ of CCS could become standard practice for all large stationary fossil fuel installations.

### Cost Key

#### China would adopt CCS at higher cost, but demonstrations are key to make it feasible

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While  CCS  still  faces  considerable technological, regulatory and public acceptance hurdles, a central barrier to deployment is the ability of project developers to overcome project risks and secure adequate financing to address the additional or incremental cost of projects with CCS, often referred to as the commercial gap. Based on several reports and IEA estimates, a typical coal‐fired power plant in OECD member countries will likely incur additional costs of around USD 1.5 billion (for capture technologies without storage costs, with 90% capture efficiency). In China those figures for capture costs are likely to be lower, roughly USD 1 billion, based on 2009 cost analysis by the UK‐China Near Zero Coal initiative (NZEC). Operating costs for power plants with CCS are also higher, largely because of the energy penalty or extra energy required to run the capture and compression system (15% to 30%). With today’s technology, coal‐fired power plants with CCS could see an increase in the cost of electricity of as much as 80% or would need carbon prices at levels as high as USD 70/ton (USD 40/ton in China) to become financially viable. More specific cost analysis for China can be referenced from the 2009 NZEC studies and other domestic cost analysis. However more in‐depth analysis of costs related to the whole chain of CCS and site‐specific costs would help further clarify costs for specific technology pathways that are likely to differ in China from those of other countries engaging in CCS demonstration. According to IEA CCS cost analysis, considering uncertainties of current cost performance data, from a global perspective, no single technology for carbon capture from coal‐fired power generation clearly outperforms the available alternative capture routes. In particular, this applies to average overnight costs and levelised cost of electricity, but also includes cost of CO2 emissions avoided, provided the same plant without capture is chosen as a reference (Finkenrath, 2011). China’s position towards funding CCS on a wide scale is similar to that of most developing countries. Some concerns reflect the belief that CCS is too expensive, reluctance to accept responsibility for funding it solely themselves, considering China’s stated CO2 emissions per capita compared with OECD figures. However, given China’s rising energy consumption and correlated carbon emissions per capita, further consideration for rapid mitigations efforts even at higher costs may be needed, for China’s efforts to achieve a balance between enhancing and sustaining energy security – while providing affordable energy – also limit progress in this area. CCS demonstration projects and early commercial projects are expected to be more expensive than later projects, and costs are expected to decline as experience is gained and the technology moves along its learning curve (Riahi et al., 2004) (Figure 5.1). Public‐private partnerships (PPP) and targeted incentives need to be further explored at this stage in order to address the commercial gap, accelerate deployment and drive down both costs and risks. Substantial public funding support is needed to mitigate high costs and risks, but governmental support levels should decline with experience, technology improvements and market development.

### Solves Fast

#### China can quickly develop CCS – Resources, incentives, regulations, agreements

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China has considerable domestic resources to support the development of the CCS industry. In addition to R&D efforts, China could deploy policies to support domestic demand for CCS technologies and to position its companies to export technology and/or generate CO2 emissions reduction through CCS projects for the international carbon market. China’s policies to promote new technologies typically include: providing capital and other incentives for technology adoption; forcing industry to upgrade power and industrial facilities; and entering into voluntary agreements with industry to adopt technology. In addition, China’s lower cost structure and short timelines for project approvals and construction provide the rationale for a positive outlook on CCS in China compared to other parts of the world. However, as mentioned, costs, viability of storage and scale of capacity, along with creating markets and financing channels, are key challenges that need to be addressed for CCS to be feasible in China in the long term.

### Tipping Point Preventable

#### Impacts of warming are inevitable if its kept under 2 degrees

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The intellectual property and technology transfer issues need to be placed in the¶ context of the work of the International Panel on Climate Change (IPCC). For some¶ time the IPCC has been describing the likely risks that accompany rises in global¶ average temperature. In a 2001 report, a working party of the IPPC suggested that if¶ the global average rise in temperature could be kept to no more than 2ºC above the¶ 1990 level then some of the worst risks of climate change could be avoided.8This is¶ sometimes referred to as the 2ºC guardrail. Work by others using more recent data¶ suggests that even the 2ºC carries more risks than previously thought.9There has been¶ growing political support for avoiding dangerous climate change with, for example,¶ the G8 issuing statements to this effect.10In response to this bout of political pledging¶ international organizations such as the IEA and the OECD have looked at possible¶ reduction emission scenarios that are consistent with the 2ºC ‘‘guardrail’’.11

### Yes China CCS/Solves CBM Fast

#### China can quickly deploy CCS if it’s feasible – Enhanced gas recovery incentives early adoption

Mark Jaccard, professor at Simon Fraser University, arguably Canada’s foremost climate policy researcher. He was a key architect of British Columbia premier Gordon Campbell’s landmark climate change program, featuring North America’s first comprehensive escalating carbon tax and JianJun Tu, senior associate in the Carnegie Energy and Climate Program, 11, [“Show some enthusiasm, but not too much: carbon capture and storage¶ development prospects in China,” ¶ Global Environmental Change 21 (2011) 402–412, <http://carnegieendowment.org/files/China_CCS_Development_Prospects.pdf>] E. Liu

CCS development activity in China is focused on a number of¶ small, stand-alone demonstration projects to test different¶ elements of the technology. Morse et al. (2009) suggest that the¶ primary driver of this research and development is to protect¶ China’s ability to continue to rely on its plentiful, domestic coal¶ resources while potentially developing domestic technical capaci-¶ ty for this emerging energy technology. Table 4 lists the major CCS¶ activities in China and the map of Fig. 3 shows their location.¶ In recent years, Chinese national oil companies have experi-¶ mented with CO2injection for enhanced oil recovery in several¶ major oil fields including Shengli, Zhongyuan, Jilin, Daqin, Jiangsu,¶ and Songliao (Chen, 2010). Enhanced oil recovery is of interest¶ especially because it provides an opportunity to offset at least part¶ of CCS costs by providing value for oil recovery activities.¶ Another prospect for CO2storage is via its injection into coal¶ beds to release methane for commercial production.4China United¶ Coalbed Methane Co Ltd successfully conducted coal bed methane¶ extractiontestsasearlyas2004inthesouthQinshuibasinofNorth¶ China’s Shanxi Province, although commercialization activities¶ have been slow so follow (Chen, 2010).¶ The electricity-related development of CCS in China has a¶ particular focus on pre-combustion technologies, notably inte-¶ grated gasification combined cycle plants that enable separation¶ and capture of CO2during the production of a hydrogen rich gas¶ that can be refined into pure hydrogen or combusted for thermal-¶ electric generation. As part of the National 863 Program, a 36 t/day¶ dry pulverized coal pressurized gasification pilot plant was built at¶ the Xi’an Thermal Power Research Institute to test out the¶ technology that will be used for GreenGen, China’s first IGCC-¶ based CCS project.5The goal is to complete a 400MW IGCC¶ GreenGenpowerplantbefore2020withefficiencybetween 55and¶ 60% and over 80% of the CO2separated and stored.6Similarly, there¶ are several ongoing IGCC initiatives in Guangdong, Zhejiang and¶ Hebei with CO2capture option under study (Xu, 2009).¶ China is also examining the potential for post-combustion¶ capture of CO2from the flue gas of coal-fired electricity plants. A¶ 3000 tCO2/annum CCS facility commissioned at Huaneng Group’s¶ Gaobeidian Thermal Power Plant in 2008 is China’s first¶ operational CCS pilot plant (IEA, 2009).¶ However, the first large-scale CCS project in China is slated to¶ occur at a coal-to-liquid plant. Shenua’s coal-to-liquid project in¶ Inner Mongolia will capture and store 100 thousand tCO2 per¶ annum.7Although this represents only a small fraction of the¶ plant’s annual carbon emissions of 3.6 MtCO2, the technology can¶ be scaled up if it proves successful.¶ In summary, the majority of large point sources of CO2¶ emissions in China are located along the more heavily industrial-¶ ized coastal zones and the Huabei plain. In comparison, the total¶ onshore storage capacities of depleted oil and gas fields and¶ unmineable coal bed seems amount to 20.9 GtCO2, which is only¶ about 3.5 times China’s total CO2emissions in 2007 (Dahowski¶ et al., 2008). As a result, while enhanced oil and gas recovery and¶ unmineable coal beds may represent good opportunities for initial¶ CCS projects in China at significantly lower costs, large-scale CCS¶ deployment will require the country to develop more expensive¶ geological storage sites such as deep saline aquifers, perhaps¶ offshore where costs will be even higher.

### Yes China Political Will

#### Chinese officials are interested in CCS for large development – Compatible systems

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As the world’s largest consumer of fossil fuels and producer of CO2 emissions, China presents a critical yet challenging market for large‐scale deployment of CCS. In the face of competing economic, development, energy security and low‐carbon energy priorities, China has shown cautious, but increasing interest in CCS. CCS is compatible with an existing and developing fossil‐ fuel infrastructure. With its distinct comparative advantages and unique opportunities to host large‐scale demonstrations, China has the potential to become a leading global provider of CCS technologies and engineering services. Senior Chinese leaders have highlighted the importance of looking more closely at CCS as a technology with potential for large‐scale deployment in China, and there is significant activity in both government and industry R&D programmes to explore options for CCS. China’s current RD&D efforts emphasise various carbon capture technologies, with an increasing focus on utilisation opportunities. China’s early commercial demonstration projects, GreenGen and the Shenhua Direct Coal Liquefaction CCS Project, feature important technologies (coal gasification and coal liquefaction) with key learning on concentrated CO2 streams for hydrogen production, EOR and storage that will likely have strategic implications for China’s long‐term energy supply and strategy.

## Neg

### China-Russia Alliance Doesn’t Balance

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Certainly, this does not mean that Russia and China have now combined forces ¶ to promote a global anti-western front in a classical realist balancing fashion. For ¶ China, as noted in the previous section, as well as for Russia, the West remains a ¶ critical partner, and cooperation and integration with the West remain mutually ¶ beneficial. China and Russia are also as much rivals as allies in terms of global ¶ politics. However, what the energy dimension of Sino-Russian relations does ¶ demonstrate is that Russia plays a critical role in ensuring that China’s needs for ¶ the vital energy resources of the former Soviet Union, and potentially also of ¶ Iran, can be securely supplied to Chinese markets even in the context of a severe ¶ deterioration in Sino-US relations. In this sense, there is a clear balancing element ¶ in China’s strategic relationship with Russia when viewed through the prism of ¶ China’s energy security strategy.

### Cooperation Solves Regional Energy Wars

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In its own continent, China has been making gradual progress in cooperating over oil and gas. In 2002, China and ASEAN members assured that they will aim to resolve territorial disputes through peaceful means (Bijian, 2005). In 2005, China agreed to initiate joint exploration programmes of oil and gas with Vietnam and the Philippines including an agreement of cooperation on gas with Indonesia (Liao, 2008). China and India have also attempted to cooperate by signing a memorandum of understanding for enhancing cooperation in the field of oil and natural gas (Kennedy, 2010). Both agreed to cooperate on “energy exploration, production, storage, and stockpiling, research and development, and conservation” which would bring down energy prices in Asia (Lai, 2007, p. 533). Lastly, China was successful in building cooperation between India and Pakistan by proposing an Iran-Pakistan- India “Peace pipeline” (Lai, 2007, p. 533). As for unstable relations with its Japanese neighbour, both governments have actually been making contributions since 1970 and expressed a willingness to assist each other and Asian states in utilizing non-oil energy like wind and solar power (Liao, 2008). Cooperation between both governments also extends to the East China Sea where Japan has refrained from drilling in disputed waters while offering China technological assistance for joint development (Manicom, 2008). In 2007, both Japan and china advanced dialogue pledging their commitment to peacefully settle territorial issues (Au, 2008).

### No China-Russian Alliance

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In this converging relationship energy links between the two countries provide the ¶ material and economic glue, offering Russia a lucrative new market and China a ¶ reliable source for its energy needs which avoids potential US intervention.¶ Other analysts take the view that any Sino-Russian strategic convergence is ¶ more rhetorical than substantive. It obscures the multiple underlying unresolved ¶ conflicts of interests between the two states, which include Russia’s fears about the ¶ decisive shift in the relative balance of power towards China and its own military ¶ vulnerability in the Russian Far East, and the Chinese memory of Russian colonial ¶ intervention and the hostility of the Soviet Union, which almost led to a full-¶ scale war.30 Mao reportedly claimed, at the deepest point of the Sino-Soviet split, ¶ that Russia had taken over the ‘area east of Baikal, Vladivostok, Khabarovsk, ¶ Khamchatka’ and hinted that China would seek their return.31 There is also the ¶ pragmatic reality that the most important economic and political relations for ¶ both countries remain those with the West. Although bilateral trade increased ¶ from a pitiful US$380 million in 1989 to US$48 billion by 2007, this represents ¶ only a small fraction of Russia’s trade with the EU (US$204 billion) and China’s ¶ trade with the United States (US$356 billion) and Japan (US$302 billion). Bobo ¶ Lo, who has written the most authoritative recent study of Sino-Russian relations, ¶ argues that the relationship is best characterized as an ‘axis of convenience’ rather ¶ than as a substantive partnership, and that it falls short of a genuine attempt ¶ to construct a countervailing balance to western hegemony.32 He highlights in ¶ particular the considerable difficulties and disappointments in the bilateral energy ¶ relationship, where much-vaunted joint projects, such as the initiatives in the late ¶ 1990s to build gas and oil pipelines between the two countries, failed to materialize ¶ and China was forced to look elsewhere, for example to Central Asia, Africa and ¶ Latin America, to ensure its oil and gas supplies. It is here, Lo notes, that the gulf ¶ between ‘image and reality is greatest’.33

### No Energy Wars

Abd Al-Aziz Abu Al-Huda, International Politics Eergy Culture Intern at Middle East Consultancy Services Arab Insurrection Analyst at Transnational Crisis Project Intern at Hudson Institutem 4-20-12, [“Can China’s Growing Demand for Energy be Satisfied Without Conflict?,” <http://inpec.in/2012/04/20/can-chinas-growing-demand-for-energy-be-satisfied-without-conflict/>] E. Liu

While China is a growing power, it largely remains dependent negotiating deals with Oil producing countries that ultimately control supplies (Garrison, 2009). One must point out that only a small share of oil actually goes back to China. Around 85% of imported oil and gas reserves are actually sold and injected into the open market (Garrison, 2009). In fact, one can argue that China’s oil deal with Iran actually increases the supply of energy in the global market restricting prices from increasing (Kambara, 1984). Additionally, regardless whether China sold its imports or not, the U.S would still not be affected because its oil imports from the Arab states are minuscule compared to the “1011.6 and 590.3 million tons of oil annually” purchased from Canada and Mexico (Lai, 2007, p. 531). China on the other hand only imports “51.7 million tons roughly 8.8% of the U.S imports” which are not large enough to upset the U.S (Lai, 2007, p. 531). Arguably, one can also claim that China contributes to global energy security because until recently, they had a high degree of self-reliance of around 90% of energy being generated in China (Garrison, 2009, p. 144). Now, China actually produces 10% of the world’s oil and so it is likely that no conflict on behalf of China, the U.S, or the region will be imminent because China lacks military capabilities and the U.S and the region, particularly Japan favour increased energy output which decreases the prices of oil and gas. As previously stated, any actual conflict will most likely be due to a political fallout rather than energy scarcity (Yergin, 2006). Furthermore, China’s current economy is only a fraction compared to the U.S economy and slightly stronger compared to its Asian neighbours. In per capita, Zheng Bijian argues that “China remains a low income country and China faces constraints to get its 1.3 billion population out of poverty” (Bijian, 2005, p. 19). Taking this into consideration, it is likely that China would view continuing oil diplomacy as much more cost effective and successful compared to using its limited military means (Ziegler, 2006, p. 8). China also considers its dependence for supplies of oil products like “gasoline, diesel oil, kerosene and fuel which come from its neighbours in South Korea, Russia, and Singapore as well as Japan and Malaysia and the Philippines” which, with the exception of Russia, has U.S military presence (Lai, 2007, p. 528).

### No Supporting Iran

Abd Al-Aziz Abu Al-Huda, International Politics Eergy Culture Intern at Middle East Consultancy Services Arab Insurrection Analyst at Transnational Crisis Project Intern at Hudson Institutem 4-20-12, [“Can China’s Growing Demand for Energy be Satisfied Without Conflict?,” <http://inpec.in/2012/04/20/can-chinas-growing-demand-for-energy-be-satisfied-without-conflict/>] E. Liu

As for Iran, when Iranian-U.S relations were deteriorating over Iran’s nuclear programme, it was widely held that China would support Iran considering the Iranian concessions made to Iran for joint development. But China in fact supported a proposal initiated by the U.S and the European Union to refer Iran’s nuclear programme to the U.N Security Council should Iran fail to cooperate with inspections (Lai, 2007). Also, China agreed with the international community that Iran should not develop nuclear weapons (Calabrese, 1998).

### Technological Protections Block Cooperation

#### Relaxing of technology protections is a prerequisite to cooperation

David Wendt, co-founded the Jackson Hole Center for Global Affairs in 2002 and has ¶ been its president since that time, leader in a U.S. bicentennial program on global interdependence at the World ¶ Affairs Council of Philadelphia (1975-77); a program on global health, population, and ¶ environmental issues at the Center for Strategic and International Studies, in ¶ Washington, D.C. (1977-98); and the international program of Idaho State University, in ¶ Pocatello, Idaho (1998-2006), 8-08, [“CLEAN COAL: ¶ U.S.-CHINA COOPERATION ¶ IN ENERGY SECURITY,” EastWest Institute, <http://www.isn.ethz.ch/isn/Digital-Library/Publications/Detail/?ots591=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&lng=en&id=104337>] E. Liu

The key to a U.S.-China strategy for energy security based on clean coal is ¶ the recognition of mutual vulnerabilities. Each needs to recognize areas of ¶ vulnerability in the other—CCS for China, coal gasification-based ¶ polygeneration technologies for the United States—that its own comparative ¶ advantages can help overcome. Each needs to be sufficiently open to the ¶ other to be willing to channel its own strengths into this effort in the interests of ¶ both mutual security and the future of the planet. To this end, each also needs ¶ to be prepared to relax its guard over trade secrets and to compensate those ¶ disadvantaged by their loss of control over information. Only then, perhaps, ¶ can both emerge from the lengthening shadows of a competition for world ¶ energy supplies into a new dawn of confidence building, technology sharing, ¶ and energy saving based on clean coal. Thus, the following recommendations ¶ are made to promote cooperation on clean coal technology: ¶ ? Utilize ¶ Chinese ¶ expertise ¶ in ¶ coal ¶ gasification ¶ to ¶ promote ¶ ‘polygeneration’ processes from coal. ¶ ? Accelerate the trial-and-error process of CCS site preparation and ¶ development in the United States and engage Chinese government, ¶ industry, and research partners in applying the results of this process. ¶ ? Establish an agreed framework for intellectual property rights ¶ compensation to offset commercial losses from technological ¶ exchange and facilitate cooperation.