# 1NC

### 1nc—topicality

#### Financial incentives require the disbursement of public funds directly linked to encouraging energy production

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

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

#### Export restrictions are not production restrictions

Shih 9 Wen-chen Shih is an associate professor of law in the Department of International Trade at National Chengchi University, Taiwan. "ARTICLE: Energy Security, GATT/WTO, and Regional Agreements" Natural Resources Journal Spring, 2009 Natural Resources Journal 49 Nat. Resources J. 433 lexis

Such an argument has been questioned by others. Broome cautions that a material distinction remains between export restrictions and production restrictions. n91 He argues that oil in its natural state--oil still in the ground--cannot be characterized as a "product" within the meaning of Article XI, as it has not gone through a production process. n92 Only oil in commerce--oil that is extracted and produced for consumption can be regarded as falling under the GATT jurisdiction. n93 Therefore, only when OPEC countries restrict the quantity of oil in commerce made available for export to foreign consumers could they then violate Article XI:1. n94 He further points out that, while the jurisprudence tends to interpret Article XI:1 broadly, absurd and unintended consequences could arise if the panel or the Appellate Body does not pay attention to such differences; when a WTO Member took some measure to reduce domestic production in a particular industry, any WTO Member could complain that the country was violating Article XI:1 by influencing prices via supply restrictions. n95 In other words, "any measure that prevents an industry from operating at maximum capacity might constitute an export restriction." n96 Broome, thus, concludes that the production quotas maintained by OPEC countries should not constitute quantitative restrictions that contravene Article XI:1. n97

### 1nc—elections da

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

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

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

#### Everyone hates the plan

Levi 12 Michael is a Fellow at the Council on Foreign Relations. “A Strategy for U.S. Natural Gas Exports,” June, http://www.hamiltonproject.org/files/downloads\_and\_links/06\_exports\_levi.pdf

But there is also great wariness in many quarters about the prospect of allowing exports of natural gas. Americans usually support exports, but natural gas, along with other energy commodities, has recently received special scrutiny. Some fear that allowing exports would dangerously drive up domestic natural gas prices while making the U.S. gas market more volatile. Others would prefer that domestic gas be directed toward boosting manufacturing at home, replacing coal-fired power plants, or taking the place of oil as the ultimate fuel for American cars and trucks. Still more oppose natural gas exports because those exports would result in greater U.S. natural gas production, potentially leading to social and environmental disruption. All of these parties oppose natural gas exports, or at least seek significant constraints. Some are driven by broad visions of the national interest to conclude that natural gas exports would have negative consequences that are not captured by simple economic logic. Others are motivated by more self-interested concerns, particularly the desire to secure cheap energy inputs for their industries.

#### GOP victory would undo the reset and destroy Russia relations---triggers prolif, European instability, and global conflict

Deyermond 10/1 Ruth Deyermond is Lecturer in War Studies in the Department of War Studies, King’s College London. “The Republican Challenge to Obama’s Russia Policy,” Survival, Volume 54, Issue 5, 2012, Taylor and Francis

Implications of the divide In his 2008 analysis of the claims regarding a new Cold War, Russia specialist Richard Sakwa observed that the phenomenon would be ‘a very peculiar Cold War, since there are no fundamental ideological contradictions’ between Russia and the United States.61 The Obama administration’s reset was predicated on precisely this assumption. Along with other factors, this made possible a substantial improvement in the quality of US–Russia relations which, in turn, contributed to progress on issues of central importance to US and **global security such as arms control** and Afghanistan. One of the difficulties with regard to future US–Russia relations, however, is that this is not an assumption shared by the US political elite as a whole. For an increasingly large and dominant section of the Republican Party, it is precisely ideology which divides the United States and its foreign policy from that of Russia.¶ A striking feature of this development is the disappearance of the nuanced, broadly Realist view of Russia evident in sections of the Republican political elite in previous periods. With the gradual turnover of congressional seats and the change in the political composition of the Republican Party, the spectrum of Republican views has narrowed. This was already evident at the start of the Obama presidency, and has become more pronounced since then. Thus, of the 13 Republican senators who voted to ratify New START in December 2010, five have left, declared their intention to stand down (one citing the rigid, partisan character of contemporary congressional politics as the reason for doing so), or, in the case of Richard Lugar, lost a 2012 nomination contest to a Tea Party-backed competitor.62 Of the remaining eight, half have not faced re-election since the ratification vote. Thus more than half the Republican senators who voted for New START and who have faced re-election either failed to secure re-nomination or chose not to seek it. This turnover has taken place in the context of a strengthening of the conservative wing as the increasingly dominant force in the Republican Party.¶ What makes the Republican picture of Russia problematic is the tone of criticisms, which often combine inaccuracy with heightened rhetoric, and the fact that these criticisms are rarely, if ever, tempered with less negative observations about contemporary Russia, or mitigating context. This is not to suggest that political and analytical elites should claim to see positive features where none exist, but that the conduct of **effective, cooperative bilateral relations becomes** impossible **when the majority party in one state regards the other state as its political and moral opposite.** A Republican-majority Senate would make the exercise of US–Russia relations very difficult; evidence to date suggests that the election of a Republican president would make this problem even **more acute.** ¶ This is of particular concern because opposition to the current administration’s policies to improve relations with Russia does not always appear to be grounded in concern about the technical detail of the policies, but rather in partisan opposition to an overall reset policy which the Obama administration has identified as a significant foreign-policy success, and in a **fundamental opposition to the Russian state**. Both factors present intractable problems for the future of the US–Russia relationship. Research into both congressional behaviour and party support in the US indicates that partisanship is hardening, and that it is unlikely to be reversed.63 If the Republican picture of Russia is also grounded in political ideology and world view, then the steady transformation of the Republican Party into a politically narrower, more cohesively conservative organisation is likely to continue to strengthen that picture. The consequences are not confined to the next Republican presidency.¶ As the 2012 US presidential election approaches, the reset relationship has come under strain in a number of areas. The Obama administration, which had previously tended to avoid the strident language on democracy used by the Bush administration, was unusually forthright on the subject of the Russian parliamentary elections in November 2011, which Secretary of State Hillary Clinton described as ‘neither free nor fair’, a response attacked by both Putin and Medvedev.64 In the same month, Obama refused to provide Russia with legal guarantees that the European missile-defence system could not be used against Russian missiles. In response, Medvedev announced that if missile-defence plans continued in ways contrary to Russian security interests, Russia would take assertive measures including the deployment of missiles along its southern and western borders; arming new ballistic missiles with missile-defence penetration systems; and withdrawing from the New START treaty.65¶ As Dmitri Trenin, director of the Carnegie Moscow Center, has suggested, Obama’s refusal to make concessions on this aspect of missile defence needs to be understood in the context of Republican opposition to such agreements.66 Given the attacks made by Republicans on the administration’s policy on missile defence and New START, and on the subject of democracy in Russia, this public hardening in approach on these issues appears to have been driven, to some extent, by the desire to neutralise criticism in an election year (this appeared to be the implication of Obama’s overheard comments to Medvedev in March). The Republican response to this incident appeared to confirm Obama’s view that compromise on the subject would be politically impossible before the election; in addition to the condemnation of Obama’s comments, some sections of the party subsequently sought to portray Obama and the Russian government as close political allies. One March 2012 Republican National Committee press release, for example, was titled ‘President Medvedev (D-Russia)’, adapting the designation for Democratic members of Congress.67¶ The complexity of negotiating the relationship with Russia in the context of partisan, domestic hostility has been increased by the serious dispute with Russia over Syria. The Russian government’s refusal to agree to a Security Council resolution on Syria has produced the administration’s most outspoken criticism of Russia, with Hillary Clinton describing Russian blocking of a resolution in February 2012 as ‘despicable’ and urging states in July 2012 to ‘directly and urgently mak[e] it clear that Russia and China will pay a price’ for their conduct on Syria.68 This increasingly forthright position has, to be sure, not prevented senior Republicans from claiming that inaction on Syria is a product of the reset, and of the administration’s inability to assert US interests and values in its dealings with an authoritarian regime in Moscow. This domestic criticism, despite the strong public stance of the administration, limits the scope for possible negotiation with Russia, particularly in an election period. Given the entrenching of the Russian position in response to public criticism on this and other issues, the constraining influence of domestic pressure from the Republican Party risks a further deterioration in bilateral relations, with the potential to undo much of the progress achieved under the reset. The strong response by Russia on these issues indicates the dangers that this domestic pressure poses to the gains of the reset.¶ **The most significant, near-term threat lies in the possibility of a change in policy towards Russia if a new US president is elected** in November 2012.69 This would not only damage the bilateral relationship itself, but also disrupt progress on a range of critical global security issues, including future arms-control and **non-prolifer**ation efforts; and further reduce the already restricted possibility of coordinated action on **international security challenges** in the UN and other institutions; and on the long-term prospects for European security, all of which rely on cooperative engagement between Washington and Moscow. The mainstream Republican hostility towards a ‘Potemkin reset’ and to the contemporary Russian state needs to be reconsidered for the sake of American and **international security.**

#### US-Russia relations key to solve extinction

Allison 11 (Graham, 10/30, Director of the Belfer Center for Science and International Affairs at Harvard’s Kennedy School of Government, “10 reasons why Russia still matters,” http://dyn.politico.com/printstory.cfm?uuid=161EF282-72F9-4D48-8B9C-C5B3396CA0E6)

That central point is that Russia matters a great deal to a U.S. government seeking to defend and advance its national interests. Prime Minister Vladimir Putin’s decision to return next year as president makes it all the more critical for Washington to manage its relationship with Russia through coherent, realistic policies. No one denies that Russia is a dangerous, difficult, often disappointing state to do business with. We should not overlook its many human rights and legal failures. Nonetheless, Russia is a player whose choices affect our vital interests in nuclear security and energy. It is key to supplying 100,000 U.S. troops fighting in Afghanistan and preventing Iran from acquiring nuclear weapons. Ten realities require U.S. policymakers to advance our nation’s interests by engaging and working with Moscow. First, Russia remains the only nation that can erase the United States from the map in 30 minutes. As every president since John F. Kennedy has recognized, Russia’s cooperation is critical to averting nuclear war. Second, Russia is our most consequential partner in preventing nuclear terrorism. Through a combination of more than $11 billion in U.S. aid, provided through the Nunn-Lugar [CTR] Cooperative Threat Reduction program, and impressive Russian professionalism, two decades after the collapse of the “evil empire,” not one nuclear weapon has been found loose. Third, Russia plays an essential role in preventing the proliferation of nuclear weapons and missile-delivery systems. As Washington seeks to stop Iran’s drive toward nuclear weapons, Russian choices to sell or withhold sensitive technologies are the difference between failure and the possibility of success. Fourth, Russian support in sharing intelligence and cooperating in operations remains essential to the U.S. war to destroy Al Qaeda and combat other transnational terrorist groups. Fifth, Russia provides a vital supply line to 100,000 U.S. troops fighting in Afghanistan. As U.S. relations with Pakistan have deteriorated, the Russian lifeline has grown ever more important and now accounts for half all daily deliveries. Sixth, Russia is the world’s largest oil producer and second largest gas producer. Over the past decade, Russia has added more oil and gas exports to world energy markets than any other nation. Most major energy transport routes from Eurasia start in Russia or cross its nine time zones. As citizens of a country that imports two of every three of the 20 million barrels of oil that fuel U.S. cars daily, Americans feel Russia’s impact at our gas pumps. Seventh, Moscow is an important player in today’s international system. It is no accident that Russia is one of the five veto-wielding, permanent members of the U.N. Security Council, as well as a member of the G-8 and G-20. A Moscow more closely aligned with U.S. goals would be significant in the balance of power to shape an environment in which China can emerge as a global power without overturning the existing order. Eighth, Russia is the largest country on Earth by land area, abutting China on the East, Poland in the West and the United States across the Arctic. This territory provides transit corridors for supplies to global markets whose stability is vital to the U.S. economy. Ninth, Russia’s brainpower is reflected in the fact that it has won more Nobel Prizes for science than all of Asia, places first in most math competitions and dominates the world chess masters list. The only way U.S. astronauts can now travel to and from the International Space Station is to hitch a ride on Russian rockets. The co-founder of the most advanced digital company in the world, Google, is Russian-born Sergei Brin. Tenth, Russia’s potential as a spoiler is difficult to exaggerate. Consider what a Russian president intent on frustrating U.S. international objectives could do — from stopping the supply flow to Afghanistan to selling S-300 air defense missiles to Tehran to joining China in preventing U.N. Security Council resolutions.

### 1nc—disad

#### Unlimited exports tank the manufacturing industry—key to competitiveness

Blitz 12 (George, Vice President of Energy and Climate Change at Dow Chemical Company, “Manufacturing Key to Natural Gas Value”, 4/19, http://energy.nationaljournal.com/2012/04/what-should-us-policy-be-on-en.php#2198672)

While the nation struggles to find solutions to the current economic crisis, there has been a sharp focus on the country's newly abundant supply of natural gas as a potential cure---and rightly so. However, those that advocate unlimited natural gas exports are taking a short-sighted approach, missing the tremendous opportunity to leverage domestic natural gas to spur a manufacturing Renaissance in the U.S.

Already the prospect of advantaged and abundant U.S. gas has sparked domestic investment in many manufacturing industries, such as petrochemicals, fertilizers, glass, aluminum and steel. These investments will convert natural gas to products for export that deliver up to eight-times greater value than simply exporting the gas itself because American manufacturers use natural gas both as a fuel source and as a raw material to create high-value products. This initial use of natural gas begins a chain reaction that stimulates investment, creates jobs and strengthens the economy **well beyond what gas production and export alone can achieve.**

Take the U.S. chemical industry for example. The American Chemistry Council estimates that a 25 percent increase in the production of shale gas and ethane (a shale gas derivative) would create more than 400,000 new jobs along the entire value chain, $16 million in investment, more than $130 billion in economic output and $4.4 billion in new tax revenues.

However, supply and demand must be balanced in a way that allows gas producers to maintain supply at stable, globally competitive prices that spur manufacturing growth and deliver reasonable costs for all consumers. Manufacturers may be the most price-sensitive users of natural gas and a rush to artificially create demand or constrain supplies would destroy the competitive advantage abundant, affordable domestic natural gas is creating for the U.S.

Policies that artificially accelerate demand, especially in-elastic demand, upset the natural supply-and-demand balance necessary to keep natural gas prices affordable for U.S. manufacturers. This includes unlimited exportation of natural gas.

Fair and free trade must be supported in a nationally prudent manner. A sound energy policy that promotes U.S. economic growth is needed for us to realize the tremendous opportunity domestic natural gas presents.

Alternatively, exporting amounts of natural gas that drive prices closer to the global price of crude oil will inhibit this once-in-a-lifetime opportunity to restore U.S. manufacturing and miss a golden opportunity to create high-paying middle class jobs and bring back economic prosperity.

#### Solves great power war

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

Hence, economic policies and performance do have **strategic consequences.**2 In the modern era, the idea that strong economic performance is the **foundation of power** was argued most persuasively by historian Paul Kennedy. 'Victory (in war)', Kennedy claimed, 'has repeatedly gone to the side with more flourishing productive base'.3 Drawing attention to the interrelationships between economic **wealth, technological innovation, and the ability of states to** efficiently **mobilize economic and technological resources for power projection and national defence**, Kennedy argued that nations that were able to better combine military and economic strength scored over others. 'The fact remains', Kennedy argued, 'that all of the major shifts in the world's military-power balance have followed alterations in the productive balances; and further, that the rising and falling of the various empires and states in the international system has been confirmed by the outcomes of the **major Great Power wars**, where victory has always gone to the side with the greatest material resources'.4 In Kennedy's view, the geopolitical consequences of an economic crisis, or even decline, would be transmitted through a nation's inability to find adequate financial resources to simultaneously sustain economic growth and **military power**. The classic 'guns versus butter' dilemma. Apart from such fiscal disempowerment of the State, economic under-performance would also reduce a nation's attraction as a market, as a source of capital and technology, and as a 'knowledge power'. As power shifted from Europe to America, so did the knowledge base of the global economy. As China's power rises, so does its profile as a 'knowledge economy'. Impressed by such arguments, the China Academy of Social Sciences developed the concept of Comprehensive National Power (CNP) to get China's political and military leadership to focus more clearly on economic and technological performance than on military power alone in its quest for Great Power status.5 While China's impressive economic performance, and the consequent rise in China's global profile, has forced strategic analysts to acknowledge this link, the recovery of the US economy in the 1990s had reduced the appeal of the Kennedy thesis in Washington, DC. We must expect a revival of interest in Kennedy's arguments in the current context. A historian of power who took Kennedy seriously, Niall Ferguson, has helped keep the focus on the geopolitical implications of economic performance. In his masterly survey of the role of finance in the projection of state power, Ferguson defines the 'square of power' as the tax bureaucracy, the parliament, the national debt, and the central bank. These four institutions of 'fiscal empowerment' of the state enable nations to project power by mobilizing and deploying financial resources to that end.6 Ferguson shows how vital sound economic management is to strategic policy and **national power**. More recently, Ferguson has been drawing a parallel between the role of debt and financial crises in the decline of the Ottoman and Soviet Empires and that of the United States. In an early comment on the present financial crisis, Ferguson wrote: We are indeed living through a global shift in the balance of power very similar to that which occurred in the 1870s. This is the story of how an over-extended empire sought to cope with an external debt crisis by selling off revenue streams to foreign investors. The empire that suffered these setbacks in the 1870s was the Ottoman empire. Today it is the US. … It remains to be seen how quickly today's financial shift will be followed by a comparable geopolitical shift in favour of the new export and energy empires of the east. Suffice to say that the historical analogy does not bode well for America's quasi-imperial network of bases and allies across the Middle East and Asia. Debtor empires sooner or later have to do more than just sell shares to satisfy their creditors. … as in the 1870s the balance of financial power is shifting. Then, the move was from the ancient oriental empires (not only the Ottoman but also the Persian and Chinese) to western Europe. Today the shift is from the US - and other western financial centres - to the autocracies of the Middle East and East Asia. …7 An economic or financial crisis may not trigger the decline of an empire. It can certainly speed up a process already underway. In the case of the Soviet Union, the financial crunch caused by the Afghan War came on top of years of economic under-performance and the loss of political legitimacy of the Soviet State. In a democratic society like the United States, the political legitimacy of the state is constantly renewed through periodic elections. Thus, the election of Barack Obama may serve to renew the legitimacy of the state and by doing so enable the state to undertake measures that restore health to the economy. This the Soviet State was unable to do under Gorbachev even though he repudiated the Brezhnev legacy and distanced himself from it. Hence, one must not become an economic determinist, and historic parallels need not always be relevant. Politics can **intervene and offer solutions**. Political economy and politics, in the form of Keynesian economics and the 'New Deal' did intervene to influence the geopolitical implications of the Great Depression. Whether they will do so once again in today's America remains to be seen.

### 1nc—disad

#### US LNG exports cause a global transition from oil indexation to spot pricing

Hulbert 12 (Matthew Hulbert - Lead Analyst at European Energy Review, government consultant, Senior Research Fellow @ Netherlands Institute for International Relations, working on energy and political risk. Senior Energy Analyst at Datamonitor for global utilities. “Why America Can Make or Break A New Global Gas World,” 8/05/2012 http://www.forbes.com/sites/matthewhulbert/2012/08/05/why-america-can-make-or-break-a-new-global-gas-world)

The same **debate is raging in the US**. Despite the phenomenal breakthroughs in American shale developments, the front runner of the revolution now risks becoming a victim of its own success in terms of Henry Hub prices dropping so low, that full cycle economics for US shale gas plays have become negative. Unless prices organically firm, or US producers learn the dark art of supply restraint, current output levels will be difficult to maintain or enhance for American consumers. Companies will fold; fields will be mothballed, with Chesapeake providing the best ‘poster boy’ example of how precarious shale gas economics have become. The quick fix option to get Henry Hub back at a sustainable $4-7/MMbtu level (and by far the most lucrative for some of the mid-cap players involved), is to sign up international LNG contracts. That’s exactly what’s being done, with some of the larger IOCs (Royal Dutch Shell, BP and ExxonMobil) also aggressively pushing for LNG exports to capitalise on huge spreads, not to mention preventing further write-downs on shale assets. It’s not like Chinese champions working on US plays would have any ideological opposition to such a prospect. In total, **FERC has around 125bcm/y of LNG applications currently awaiting approval** – even on a ‘bad day’ 40-50bcm exports should be very feasible by 2020. **That would make the US** the third largest LNG player in the world. **It’s also going to be** the crucial factor over the next five years **to decide where gas markets are heading**. **America will be** decisive **for** future pricing models**,** **whether they shift to gas (rather than oil) fundamentals**. US LNG could be the straw that breaks oil indexation back.

#### Spot pricing causes short term volatility --- Russia floods the market to crowd out producers and engages in collusion to drive up future prices

Hulbert 12 (Matthew Hulbert - Lead Analyst at European Energy Review, government consultant, Senior Research Fellow @ Netherlands Institute for International Relations, working on energy and political risk. Senior Energy Analyst at Datamonitor for global utilities. “Why America Can Make or Break A New Global Gas World,” 8/05/2012 http://www.forbes.com/sites/matthewhulbert/2012/08/05/why-america-can-make-or-break-a-new-global-gas-world)

But it’s not all bad news for Russia. The first point is that most consumers (especially continental Europeans) are labouring under the illusion that spot markets mean cheap prices. What they miss, is that **setting gas prices based on gas fundamentals has got nothing to do with being cheap** – it’s purely about achieving a cost reflective price for whatever the markets (and fundamentals) suggest gas should be. Gas on gas competition might well have positive medium term effects on price given marginal costs of production are generally cheaper than oil. But there are never any guarantees. If anything, **prices could initially be far more volatile than those associated with piped gas given the cyclical nature of the beast**, not to mention adapting to new upstream investment regimes unable to fall back on the oil ‘certainties’ of old. But assuming these initial hurdles are jumped and gas markets are politically allowed to bed in, that’s where the real fun and games start. As much as consumers think they’ve taken the political sting out of gas producers tails, **spot markets could actually give producers far more leverage to manipulate prices, either on a collective or bilateral basis**. When you take a quick look at the map, it’s clear to see **supply side dynamics are essentially oligopolistic in Europe, a position that Russia might decide to capitalise on**. The question is whether Russia would have the nerve to go for it, or be able to take the ideological leap of faith needed to explore and exploit a potentially lucrative new world of gas benchmarks?

Much would depend on pricing pressures involved and how far convergence has got, but **the lower prices go, the more compelling prospect supply side collusion would become**. Warning shots along such lines have been repeatedly fired by the GECF (even if often behind closed doors) with Russia, Algeria, Iran and Venezuela all wanting to recalibrate markets back towards producer interests. Obviously someone would have to shoulder initial opportunity costs and absorb likely free riding, enforce quotas and restrict new market entry at the fringe. They would also need to find a swing producer, that many have long thought would be Qatar, but actually, flags up a huge opportunity for Russia here.

Instead of issuing empty threats to flood markets or decimate upstream investments, independent gas benchmarks might just provide Moscow with sufficient incentive to do what it should always have done: get to grips with the fact that US shale has made Russia a price taker in Europe (and Asia), and start developing LNG prospects to reclaim control of global gas fundamentals. Despite sitting on over 30% of global gas supplies, Russian LNG production accounts for less than 5% of global share. Moscow has let itself become a fringe player in a global gas world. A ridiculous statement when you consider Russia is the gas equivalent to Saudi Arabia for oil. Developing Shtokman, Sakhalin and indeed Bazhenov and Achimov fields will undoubtedly put some people’s nose out of joint, but given **Russia’s own unconventional reserves are estimated to be ten times larger than the whole of Europe**, it still has the time (and potential) to break anybody in the field on volume to dictate long term prices. If global gas benchmarks are the way of the future, then we should at least be aware that **Russia has the potential to play a pivotal role as the swing LNG producer** of the world. **The initial 62 million tonnes of LNG Shtokman and Sakhalin should hold, tells us as much.**

Not only could Russia lean far heavier on Qatar, Australia, Algeria, West African and burgeoning Latin American LNG production **to align short term prices**, **it would set the stage for a serious approach towards a** gas cartel **as** the logical conclusion of independent global gas prices. Worst of all, Russia’s swing status would be built on the shoulders of a well-supplied, but largely isolated US market. If the US goes native, Europe fails to develop indigenous supplies, and Asia soaks up excess supplies, then **Russia can have lots of fun applying its own logic of ‘gas on gas’ competition**. That should certainly give Europe something to think about at the wrong end of the Eurasian pipeline. But you never know, if Brussels asks the Chinese politely, the clever chaps in Beijing might have a plan C. Beijing LNG ‘freedom carriers’ making their way to Europe by 2025 might just be a better bet than hoping the US delivers on its global gas potential. Ironic times indeed.

#### Causes Russian resurgence and collapses the global economy

Fang et al 12 (Songying Fang - Ph.D. Assistant Professor of Political Science Rice University. Amy Myers Jaffe - Fellow in Energy Studies JamesA. Baker III Institute for Public Policy Rice University. TedTemzelides, Ph.D., Prof of Economics. “New Alignments? The Geopolitics of Gas and Oil Cartels and the Changing Middle East,” January 2012, <http://www.bakerinstitute.org/publications/EF-pub-GasOilCartels-012312.pdf>)

Ill this study, we investigate three related questions raised by the above observations. First, what is the likelihood that Russia will be successful in creating new coalitions in energy markets in the near future? Russia’s aggressive use of its own energy exports as a tool of statecraft and diplomatic leverage in recent years **has reintroduced fears of an “energy weapon”** that could be wielded in international discourse. It has been argued that tightening energy markets could raise the benefits and possible chances of success for an energy exporting country that, alone or in combination with others, **is trying to wrest political concessions** by threatening to cut off energy supplies. Such an event would present a challenge for the international economy, and it could even lead to military conflict.2

#### Russian resurgence causes global nuclear war

Blank 9 – Dr. Stephen Blank , Research Professor of National Security Affairs at the Strategic Studies Institute of the U.S. Army War College, March 2009, “Russia And Arms Control: Are There Opportunities For The Obama Administration?,” online: http://www.strategicstudiesinstitute.army.mil/pdffiles/pub908.pdf

Proliferators or nuclear states like China and Russia can then deter regional or intercontinental attacks either by denial or by threat of retaliation.168 Given a multipolar world structure with little ideological rivalry among major powers, it is unlikely that they will go to war with each other. Rather, like Russia, they will strive for exclusive hegemony in their own “sphere of influence” and use nuclear instruments towards that end. However, wars may well break out between major powers and weaker “peripheral” states or between peripheral and semiperipheral states given their lack of domestic legitimacy, the absence of the means of crisis prevention, the visible absence of crisis management mechanisms, and their strategic calculation that asymmetric wars might give them the victory or respite they need.169 Simultaneously,

The states of periphery and semiperiphery have far more opportunities for political maneuvering. Since war remains a political option, these states may find it convenient to exercise their military power as a means for achieving political objectives. Thus international crises may increase in number. This has two important implications for the use of WMD. First, they may be used deliberately to offer a decisive victory (or in Russia’s case, to achieve “intra-war escalation control”—author170) to the striker, or for defensive purposes when imbalances in military capabilities are significant; and second, crises increase the possibilities of inadvertent or accidental wars involving WMD.171

Obviously nuclear proliferators or states that are expanding their nuclear arsenals like Russia can exercise a great influence upon world politics if they chose to defy the prevailing consensus and use their weapons not as defensive weapons, as has been commonly thought, but as offensive weapons to threaten other states and deter nuclear powers. Their decision to go either for cooperative security and strengthened international military-political norms of action, or for individual national “egotism” will critically affect world politics. For, as Roberts observes,

But if they drift away from those efforts [to bring about more cooperative security], the consequences could be profound. At the very least, the effective functioning of inherited mechanisms of world order, such as the special responsibility of the “great powers” in the management of the interstate system, especially problems of armed aggression, under the aegis of collective security, could be significantly impaired. Armed with the ability to defeat an intervention, or impose substantial costs in blood or money on an intervening force or the populaces of the nations marshaling that force, the newly empowered tier could bring an end to collective security operations, undermine the credibility of alliance commitments by the great powers, [undermine guarantees of extended deterrence by them to threatened nations and states] extend alliances of their own, and perhaps make wars of aggression on their neighbors or their own people.172

### 1nc—south china sea

#### China is de-escalating South China Sea tensions – promoting peaceful negotiations now

Ponnudurai 9-26 – Parameswaran Ponnudurai, September 26th, 2012, "China Seeks To Mend Fences In Sea Dispute – Analysis" www.eurasiareview.com/26092012-china-seeks-to-mend-fences-in-sea-dispute-analysis/

As Beijing flexes its muscles over its territorial dispute with Japan in the East China Sea, it is mending fences with Southeast Asian nations after a spate of tensions in the contested South China Sea.¶ Following much prodding and diplomacy, **China appears to be showing some flexibility in its approach towards drawing up a code of conduct with the Southeast Asian nations** aimed at avoiding clashes over competing territorial claims in the vast sea, diplomats in the region told RFA.¶ Although they are skeptical of any early breakthrough for a legally binding document between China and the Association of Southeast Asian Nations (ASEAN) to guide behavior in the sea, there is optimism that negotiations will occur on a sustained basis.¶ “We see some flexibility to discuss the COC with ASEAN,” one Southeast Asian diplomat said, referring to the elusive Code of Conduct or COC which ASEAN—comprising Brunei, Burma, Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam—has been striving to devise with Beijing for a decade.¶ **In an initial display of seriousness that it is prepared to come to the table,** China sent its senior officials to Cambodia last week to informally discuss with their counterparts from ASEAN the prospects for drawing up a code, officials said.¶ This is the first meeting between the two sides specifically on the maritime dispute since ASEAN plunged into a crisis two months ago when foreign ministers of the 10-member bloc failed to issue their customary joint statement at the conclusion of their annual meeting hosted by Cambodia, China’s top ally in Southeast Asia.¶ Some ASEAN diplomats had charged that Cambodia had been influenced by China not to incorporate in the statement the views of ASEAN member states the Philippines and Vietnam, which had tiffs earlier this year with Beijing over islands and reefs in the South China Sea, causing an impasse at the meeting.¶ China claims to South China Sea¶ China claims to South China Sea¶ The ASEAN-China Senior Officials’ Informal Consultations on the Code of Conduct (COC) in the South China Sea, as last week’s meeting in Phnom Penh was officially called, was among a series of discussions in preparation for the ASEAN summit and the East Asia Summit in November.¶ “**Compared to two months ago, when there was complete reluctance to come to the table, China appears willing to sit down and talk,” said one Southeast Asian official, who was briefed on the talks but spoke on condition of anonymity**.¶ “Indirectly, they may be feeling the heat from the mounting criticism over what happened at the meeting in July which was a big blow to ASEAN,” the official said.¶ “But China has also asked the ASEAN states to do their part by reducing tensions and not conducting border incursions and creating a conducive environment for any future talks. **They don’t want us to bring in third parties [the United States] over the conflict and want us to stick to the 2002 declaration**,” the diplomat said.¶ Under a 2002 agreement for managing their overlapping territorial claims, ASEAN and China adopted a Declaration on the Conduct of Parties in the South China Sea, called DOC as a first step towards a binding code of conduct.¶ But in a reflection of the sensitivity over the issue, it was only last year—after 10 years—that they agreed on a set of guidelines to implement the declaration that was aimed at laying the groundwork for discussions on the regional code of conduct.¶ Ray of hope¶ The new ray of hope for achieving a COC comes after extensive diplomacy, including U.S. Secretary of State Hillary Clinton’s trip to Southeast Asia and China, with a meeting with Chinese President Hu Jintao.¶ Chinese leaders told Clinton—who has often emphasized that freedom of navigation in the South China Sea is a U.S. “national interest”—that they want to pursue the COC, U.S. Ambassador to China Gary Locke told a forum in Washington last week, saying the talks between the two sides were “very good.”¶ “I’ve also heard from many prominent Chinese academics that China would like somehow to return to the status quo, that they would like to lower the temperature,” Locke said.¶ Chinese Foreign Minister Yang Yechi had also visited Indonesia as well as Malaysia and Brunei, giving reassurances that diplomacy was still on track.¶ Cambodian Prime Minister Hun Sen, embarrassed by the failure by his country as 2012 ASEAN chairman to forge an agreement on the foreign ministers’ joint statement, also made a trip to China this month, meeting Prime Minister Wen Jiabao.¶ Hun Sen won assurances from Wen that Beijing will “closely work” to make the upcoming East Asia Summit which Cambodia will host a success,” Chinese media reported.¶ Southeast Asian diplomats said a key objective is to get an initial ASEAN-China accord on the COC before the November East Asia Summit, to be attended by leaders of ASEAN as well as China, Japan, South Korea, India, Australia, New Zealand, Russia and the United States.¶ **Key elements of the COC have been agreed upon by ASEAN member states whose foreign ministers will meet to consider a full draft document on the sidelines of the U.N. General Assembly in New York this coming week**, the diplomats said.¶ “We are now in the process of spelling out the draft [of the code] and we hope to be able to share it with my ASEAN foreign minister colleagues when I meet them in New York,” Indonesian Foreign Minister Marty Natalegawa said, according to the Jakarta Globe newspaper.¶ “The development of the South China Sea [issues] reminds us how we desperately need the code of conduct, [so] I’m trying to use the momentum,” Marty said, as Indonesia asserts a leadership role in ASEAN to deal with the South China Sea issue, Asia’s biggest potential military flashpoint.¶ Cambodia or Thailand, which is the ASEAN coordinator for China issues, could host another round of informal talks between senior officials from ASEAN and China on the COC before the East Asia Summit.¶ “Both sides might also issue a joint statement to commemorate the 10th anniversary of the DOC at Summit,” an official involved in the planning of the summit told RFA, referring to the declaration adopted in 2002 in Cambodia to set the stage for the regional code of conduct.¶ **Beijing has maintained all this while that it wants to resolve the South China Sea territorial conflicts on a bilateral basis with ASEAN members Brunei, Malaysia, the Philippines and Vietnam, which have competing claims with China**.

#### **India does not need US exports – long term Qatar deals solve**

Bacci 12 – Alessandro Bacci, chartered journalist for the Association's online journal DAO, March 23rd, 2012, "Qatar and India: A GasRelationship Due to Continue" www.daoonline.info/public/foto/BACCI - IKA - Qatar And IndiaMar 2012.pdf

Notwithstanding its already high dependency on Qatar's gas, since last year India has been requesting additional supplies of LNG from Qatar to meet its growing energy demands and possible disruption of supply from sanctions-hit Iran. In October 2011, India sought an additional 3-4 mtpa of LNG on long-term deals (20-25 years starting in 2013) but negotiations were delayed by price discussions which derived also from the fact that Exxon Mobil was getting favorable LNG prices in Australia in a long term contract. Qatar was looking for a price around $16 per million British thermal unit (Btu), considering a price of $105 per crude oil barrel in October 2011. In fact, Qatar sought with India a price of 15-16 percent of Japanese Crude Cocktail (JCC, average price of customs-cleared crude oil imports into Japan) meaning $15.75-16.8 per Btu, while India was ready to offer up to 14.5 percent of JCC, meaning $15.225 per Btu. The negotiations stalled for some months, then in January 2012 Qatar's Government announced that it was ready to increase its supplies of LNG to India and at the same time to facilitate the involvement of India's firms in the oil and gas sector. "In the¶ 7¶ hydrocarbon sector, the Qatari side conveyed their readiness to increase supply of LNG to meet India's requirements and to facilitate the participation of Indian companies in the oil and gas sector in Qatar," according to an official statement which was issued after the meeting.¶ **Qatar's Emir Sheikh Hamad bin Khalifa al Thani is expected to visit India soon and surely LNG exports from Qatar to India will be high on his agenda. It's in fact quite probable that during this visit the Sheikh will be making commitments in order to increase Qatar's gas supplies to India. To conclude,** this gas relationship between Qatar and India is due to continue **and it's quite likely that** this relationship could be expanded **in the shape of a two-way cross-sectoral investment partnership to additional economic sectors other than the oil and gas sector.**

#### No solvency --- India’s decision is political – not economic --- the plan cannot influence them

Daiss – 1AC Author – 9-12, East Asian energy correspondent for Energy Tribune, 9-12-12

(Tim, “The Sino Indian Vietnamese Triangle: Old Grudges, Hydrocarbons, And Geopolitical Gamesmanship Part Two ,” 9-12-12, http://www.energytribune.com/articles.cfm/11658/The-Sino-Indian-Vietnamese-Triangle--Old-Grudges-Hydrocarbons--And-Geopolitical-Gamesmanship-Part-Two, accessed 9-17-12) PM

Dr. Zha Daojiong, a professor at the School of International Studies, at Peking University in Beijing, told the Energy Tribune: “Because ONGC is a state-owned company, its answer to the Vietnamese call for biddings in the South China Sea of course is a reflection of Indian government policy preferences.”¶ “Viewed from China, ONGC’s decision to continue [in oil block 128] is obviously to sound a non-compliance with Chinese demands,” he said.¶ “Politically-diplomatically, ONGC can afford to continue on since it is not known to have entered into the offshore oil/gas sector within China proper. For the same reason, China does not have much recourse other than continuing to object and protest Indian behavior,” Zha said.

#### No war – Vietnam has multilateral ties that check China – their author

Daiss 9-12 – Tim Daiss, September 12th, 2012, "The Sino Indian Vietnamese Triangle: Old Grudges, Hydrocarbons, And Geopolitical Gamesmanship Part Two " [www.energytribune.com/articles.cfm/11658/The-Sino-Indian-Vietnamese-Triangle--Old-Grudges-Hydrocarbons--And-Geopolitical-Gamesmanship-Part-Two](http://www.energytribune.com/articles.cfm/11658/The-Sino-Indian-Vietnamese-Triangle--Old-Grudges-Hydrocarbons--And-Geopolitical-Gamesmanship-Part-Two)

He added that India’s initiative toward Vietnam’s offshore oil and gas development will strengthen Vietnam’s and ASEAN’s [Association of Southeast Asian Nations] position highly.¶ If so, ASEAN needs all the help it can get dealing with China. Many claim that ASEAN is weak, at least in efforts to counter a rising China. In its July meeting ASEAN failed to reach a consensus to present a united front over the recent standoff in the South China Sea between China and the Philippines.¶ Therefore, has India really bitten off more than it can chew by entering the South China Sea and provoking China’s displeasure? Experts state that India’s military is no match for China’s rapidly expanding military, particularly its navy, and that India also lacks the driving force and political will to match Chinese ambitions.¶ Pant questioned India’s ability to stay in the South China Sea for an extended period of time. “At this time, the Indian navy is still far behind the Chinese and so the question that many have asked is: Can India afford a conflict with China on what many in India consider a peripheral issue?”¶ Meanwhile, Vietnam continues pressing forward, not only trying to counter China in the Paracel Islands with its Indian partners, but also further south, actually Down Under. News broke on August 30 that Vietnamese-Australian defense talks were successful and lauded by both sides, especially in “peace keeping and training.”¶ This fits into Vietnam’s over all strategic planning. According to Zha, Vietnam is centering itself in the world by forming alliances with the US, Russia, Vietnam and “whoever else is considered important players in this geopolitical gamesmanship.” He added that up to the present there is a good element of success in Vietnam’s plans.¶ However economics may still rule at the end of the day. Zha pointed to the fact that trade between Vietnam and China is increasing and that “Vietnam is also pursuing a whole range of economic ties with China, the maritime boundary dispute notwithstanding.”

#### The US needs to stay out of the conflict – ensures multilateral solutions to energy competition – their author

Rogers 9-12 – Will Rogers, Guest blogger, Christian Science Monitor, September 12, 2012, "Tensions mount in South China Sea. Here's how to ease them. " [www.csmonitor.com/Environment/Energy-Voices/2012/0912/Tensions-mount-in-South-China-Sea.-Here-s-how-to-ease-them](http://www.csmonitor.com/Environment/Energy-Voices/2012/0912/Tensions-mount-in-South-China-Sea.-Here-s-how-to-ease-them)

The United States needs to strike a balance between reassuring its allies and partners in the region that it will help them safeguard their interests while also continuing to support a rules-based order in the Asia Pacific, one where institutions like ASEAN can play prominent roles in regional stability.¶ To do this, the United States needs to continue to articulate its interest in a peaceful resolution of the South China Sea dispute, and encourage countries to pursue policies that promote cooperation. But it also needs to make clear that the United States will not stand with countries that rely on threats or actual use of force to get their way, nor will the United States stand idle when such provocations threaten international peace.¶ Ultimately, though, **America needs to make every effort to** remain as neutral a party **in this dispute if these regional approaches to neutralizing energy competition are going to be effective in reducing tensions.** The options laid out above rely on credible and strong institutions that can assuage the fears of individual countries. For ASEAN and APEC to ascend to those roles as credible brokers, they cannot be **overshadowed or weakened by America playing too strong a role. It is a delicate balancing act.**

#### No escalation

Creehan ’12 – Senior Editor of the SAIS Review of International Affairs (Sean, “Assessing the Risks of Conflict in the

South China Sea,” Winter/Spring, SAIS Review, Vol. 32, No. 1)

Regarding Secretary Clinton’s first requirement, the risk of actual closure of the South China Sea remains remote, as instability in the region would affect the entire global economy, raising the price of various goods and commodities. According to some estimates, for example, as much as 50 percent of global oil tanker shipments pass through the South China Sea— that represents more than three times the tanker traffic through the Suez Canal and over five times the tanker traffic through the Panama Canal.4 It is in no country’s interest to see instability there, least of all China’s, given the central economic importance of Chinese exports originating from the country’s major southern ports and energy imports coming through the South China Sea (annual U.S. trade passing through the Sea amounts to $1.2 trillion).5 Invoking the language of nuclear deterrence theory, disruption in these sea lanes implies mutually assured economic destruction, and that possibility should moderate the behavior of all participants. Furthermore, with the United States continuing to operate from a position of naval strength (or at least managing a broader alliance that collectively balances China’s naval presence in the future), the sea lanes will remain open. While small military disputes within such a balance of power are, of course, possible, the economic risks of extended conflict are so great that significant changes to the status quo are unlikely.

### 1nc—warming

#### Exporting LNG increases emissions and causes catastrophic warming and extinction

Romm 12 (Joe Romm – PhD from MIT, Fellow at American Progress, editor of Climate Progress, previously assistant secretary of energy for energy efficiency and renewable energy. “Exporting Liquefied Natural Gas (LNG) Is Bad For The Climate,” Jun 18, 2012 http://thinkprogress.org/climate/2012/06/18/500954/exporting-liquefied-natural-gas-lng-is-bad-for-the-climate/)

The surge in U.S. production of shale gas is creating a surge in permit requests to build liquefied natural gas (LNG) terminals. That’s because the glut of U.S. gas has dropped domestic prices sharply below global price levels.

LNG Value ChainBut **if avoiding catastrophic climate change is your goal**, then **spending** huge **sums on** even conventional **natural gas infrastructure is not the answer**, as a recent International Energy Agency report made clear:

The speciﬁc emissions from a gas-ﬁred power plant will be higher than average global CO2 intensity in electricity generation by 2025, raising questions around the long-term viability of some gas infrastructure investment if climate change objectives are to be met.

And **liquefying natural gas is an energy intensive and leaky process**. When you factor in shipping overseas, you get an energy penalty of 20% or more. **The extra greenhouse gas emissions can equal 30% or more of combustion emissions**, according to a 2009 Reference Report by the Joint Research Centreof the European Commission, Liquefied Natural Gas for Europe – Some Important Issues for Consideration.

Such extra emissions all but eliminate whatever small, short-term benefit there might be of building billion-dollar export terminals and other LNG infrastructure, which in any case will last many decades, long after the electric grid will not benefit from replacing coal with gas.

Furthermore, the U.S. Energy Information Administration concluded in a 2012 report on natural gas exports done for DOE’s Office of Fossil Energy that **such exports would also increase domestic greenhouse gas emissions:**

[W]hen also accounting for emissions related to natural gas used in the liquefaction process, additional exports increase CO2 levels **under all cases and export scenarios, particularly in the earlier years of the projection period.**

Asserting any net benefit for the importer requires assuming the new gas replaces only coal — and isn’t used for, say, natural gas vehicles, which are worse for the climate or that it doesn’t replace new renewables. **If even a modest fraction** of the imported LNG displaces renewables, it renders the entire expenditure for LNG counterproductive from day one.

Remember, a major new 2012 Proceedings of the National Academy of Sciences study on “technology warming potentials” (TWPs) found that a big switch from coal to gas would only reduce TWP by about 25% over the first three decades (see “Natural Gas Is A Bridge To Nowhere Absent A Carbon Price AND Strong Standards To Reduce Methane Leakage“). And that is based on “EPA’s latest estimate of the amount of CH4 released because of leaks and venting in the natural gas network between production wells and the local distribution network” of 2.4%. Many experts believe the leakage rate is higher than 2.4%, particularly for shale gas. Also, recent air sampling by NOAA over Colorado found 4% methane leakage, more than double industry claims.

A different 2012 study by climatologist Ken Caldeira and tech guru Nathan Myhrvold finds basically no benefit in the switch whatsoever — see You Can’t Slow Projected Warming With Gas, You Need ‘Rapid and Massive Deployment’ of Zero-Carbon Power.

So spending vast sums of money to export natural gas from this country **is a bad idea for the climate**. A new paper published last week by Brooking’s Hamilton Project, “A Strategy for U.S. Natural Gas Exports,” asserts a different conclusion, primarily because it ignores all of the issues discussed above. Indeed, the paper rather amazingly asserts “Natural gas, though, has the same climate consequences whether it is burned in the United States, Europe, or Asia,” which would be true for exported U.S. gas only if we could use magic to take the U.S. shale gas and put it into European or Asian gas-fired power plants. In the real world, it takes a massive amount of energy and greenhouse gas emissions to get gas from here to those markets, as is well known in the climate policy arena.

BOTTOM LINE: Investing billions of dollars in new shale gas infrastructure for domestic use is, at best, of limited value for a short period of time if we put in place both a CO2 price and regulations to minimize methane leakage. **Exporting gas** vitiates even that limited value and so investing billions in LNG infrastructure is, at best, a waste of resources better utilized for deploying truly low-carbon energy. At worst, it **helps accelerates the world past the 2°C warming threshold into** Terra incognita — a planet of amplifying feedbacks and multiple simultaneous catastrophic impacts.

#### no bridge—natural gas kills the transition

Jones 12 (Christopher F. Jones - Ph.D, Ciriacy-Wantrup Fellow at Berkeley, previously fellow @ Harvard U. Center for the Environment. 8/29/12, " Natural Gas: Bridge or Dead End? ," Huffington Post, [www.huffingtonpost.com/christopher-f-jones/bridge-or-dead-end\_b\_1837015.html?utm\_hp\_ref=energy](http://www.huffingtonpost.com/christopher-f-jones/bridge-or-dead-end_b_1837015.html?utm_hp_ref=energy))

Critics of natural gas have typically focused on issues of pollution rather than infrastructure. First, there has been widespread opposition to 'fracking' shale gas reserves, a process that may contaminate drinking water, trigger minor earthquakes, and produce many other environmental consequences. Second, there are debates over whether natural gas really has a beneficial impact on climate. It may produce less greenhouse gas, but leaks of methane might more than offset these gains. These are important issues, but it is also worth examining the impact that expanding natural gas infrastructure will have on renewable energy systems.¶ Building a natural gas bridge will require a significant expansion of infrastructure: drilling wells for production, pipelines for distribution, and a range of devices for consumption including power plants, home furnaces, and industrial ovens. **Investing in these systems will increase the supply of natural gas** and lower its costs through economies of scale. As a result, consumers will find it cheaper and easier to use natural gas. This is a straightforward account of what infrastructure does -- it facilitates certain types of behaviors.¶ What is less appreciated is the fact that **infrastructure cuts two ways**. These systems will not simply provide an advantage for natural gas; **they will make it progressively harder and more expensive to transition to renewables.** We can examine this point by **think**ing **about relative prices and sunk costs.**¶ **Relative prices** often **matter more than absolute prices for energy transitions**. For consumers, it is not simply the price of an energy source that matters; it is how much more or less that energy source costs than other options. Right now, natural gas is already cheaper than solar and wind for electricity production in most analyses. With significant investments in natural gas infrastructure, this price gap is only likely to grow. Therefore, even though the absolute price of renewable energy will not change, wind and solar will become less attractive to consumers because they will cost relatively more.¶ What's more, these inequalities are likely to become more extreme over time **due to sunk costs**. Most of the systems designed to burn natural gas, like furnaces and electrical generating equipment, are **expensive and designed to last for decades.** Once large sums have been paid to purchase such systems, short-term price changes matter far less to consumers. Even if natural gas triples in price, **prior investments in these systems will still act as a disincentive for switching to renewables.** The sunk costs in infrastructure, therefore, further suggest that **once we get on the bridge, it will be hard to get off.**

#### AT Causes global switch away from coal

Matthews 12(Nathan Matthews - Associate Attorney, Sierra Club Environmental Law Program. “SIERRA CLUB’S MOTION TO INTERVENE OUT OF TIME, PROTEST, AND COMMENTS,” 4/18/12, http://content.sierraclub.org/sites/default/files/documents/SC%20Mtn%20to%20Intervene%204-18-12.pdf)

The EIA Study and Recent Lifecycle Analyses Demonstrate that The Environmental Benefits DOE/FE’s Conditional Authorization Relied on Are Overstated or Nonexistent The conditional authorization also concluded that export would "augment[] of global natural gas supplies [and therefore] support efforts by overseas electric power generators to switch away from oil or coal, both more carbon intensive and environmentally damaging that natural gas." DOE/FE Order 2961 at 37. Again, this conclusion should have been, but was not, investigated during the NEPA review. See Sierra Club Comment on Sabine Pass EA at 10‐11. Such investigation would have revealed **recent studies** that **demonstrate that the lifecycle emissions of LNG derived from shale gas (**which the EIA Study concludes will supply the additional demand for LNG export) **has little, if any, climate advantage over coal**. Because LNG requires additional energy to liquefy, transport, and then regasify, its energy and emissions lifecycle releases substantially more greenhouse pollution than that of gas generally, whether conventionally or unconventionally sourced. In fact, according to the only published lifecycle study of LNG used for electricity generation of which we are aware, these upstream emissions are sufficient to push LNG lifecycle emissions well above **those of natural gas generally, and into the range of coal emissions.**

**This study understates the emissions of LNG, because it** predates the recent boom in unconventional gas sources and assumes gas will come from conventional extraction.111 The study also predates EPA’s recent action to raise emissions estimates from conventional gas production. Because unconventional gas already has higher emissions than conventional gas, liquefied unconventional gas will have higher emissions still, further erasing any daylight between LNG and other fossil fuel emissions.

Numerous studies have attempted to calculate just how much the upstream methane emissions from conventional and unconventional natural gas degrade natural gas’s combustion advantage over coal. Most studies find that natural gas retains some advantage, although these studies do not incorporate the additional emissions from liquefaction and transportation. One of the most recent of these studies, a report from the Worldwatch Institute and Deutsche Bank,112 synthesizes three other reports, which were prepared by Dr. Robert Howarth et al., of Cornell,113 Mohan Jiang et al. of Carnegie‐Mellon,114 and Timothy Skone of NETL.115 As the figure below shows, whether viewed in absolute terms as a very large methane source, on in relative terms in the context of energy production**, increased gas extraction is accompanied by increased greenhouse gas emissions.** The above chart considers domestic gas consumption, and does not include the additional emissions associated with LNG.

#### Even global switching from coal wouldn’t solve catastrophic warming

Plumer 12 (Brad Plumer - reporter focusing on energy and environmental issues. He was previously an associate editor at The New Republic. August 20, 2012 “Can natural gas help tackle global warming? A primer.” Washinton Post, <http://www.washingtonpost.com/blogs/ezra-klein/wp/2012/08/20/can-natural-gas-really-help-tackle-global-warming-heres-everything-you-need-to-know/>)

Yet some environmentalists have argued that the accolades for natural gas are premature. True, the shale gas boom has led to lower carbon pollution from U.S. power plants. But the process to extract natural gas from shale rock — known as “fracking” — can release plenty of methane into the atmosphere, which also heats the planet. That muddies the climate picture a bit. What’s more, natural gas is still a fossil fuel. Even if it produces less carbon than coal, it still produces a fair amount of carbon.¶ So how do all these factors shake out? Below is a primer, but here’s the short version: It’s still uncertain how big an improvement natural gas is over coal, because of those methane leaks. The good news is that those leaks can be plugged. The bad news is that even if the leaks are plugged, a flood of **cheap natural gas isn’t**, by itself, **enough to prevent the planet from heating up significantly**. There’s only so much more carbon the world can emit if it wants to avoid a 2°C rise in global temperatures. Natural gas can help avert drastic global warming, but **only if paired with a broader set of efforts to curtail emissions**.¶ 1) Producing electricity from natural gas is less carbon-intensive than producing it from coal. If you burn natural gas to produce a certain amount of energy, you get, on average, about half as much carbon-dioxide as you get from burning coal. What’s more, modern natural-gas power plants tend to be more efficient than coal plants. So natural gas beats coal from a carbon perspective. And carbon-dioxide is the main gas warming the planet. That’s a key point.¶ 2) But the production of natural gas also emits heat-trapping methane. Natural gas is itself mainly methane. And **methane**, when it escapes into the air, **is a potent greenhouse gas** — it lingers in the atmosphere for a shorter period than carbon dioxide, but it’s far, far more effective at trapping heat. So every time some methane seeps out, during drilling or from pipeline leaks, natural gas’s contribution to global warming goes up.¶ 3) If these methane leaks are high enough, the climate benefit from switching to natural gas dwindles. A recent PNAS study found that if the leakage rate from natural-gas production rises to 6 percent, then a natural gas plant would contribute more to global warming than a coal plant would over the first 25 years of their lifespans. After that, however, the natural gas plant starts to win out. (That’s because methane breaks down in the atmosphere more quickly, while carbon dioxide persists for hundreds of years.) But the leakage rates are one key question here.¶ 4) Judging from existing research, natural gas appears to be an improvement over coal, though it’s still not clear how much. Officially, the EPA estimates that those methane leakage rates are about 3 percent. That would make natural gas a clear winner. But the EPA number is only an estimate, and it’s based on industry data that is hard to verify. One recent independent study sampled the air over a natural gas field in Colorado and found that the leakage rate might well be twice as high.¶ So there’s a great deal of uncertainty over how much cleaner natural gas is than coal. As David McCabe, an atmospheric scientist with the Clean Air Task Force, explains, many of the half-dozen recent studies that have tried to compare coal with natural gas are plagued by questionable assumptions and flaws. “From the best of the collective work,” McCabe notes, “we believe that burning natural gas for electricity produces about 30-50% less greenhouse gas than burning coal.” But that’s not a definitive number, and more research needs to be done here.¶ 5) It’s possible to plug those methane leaks and clean up natural gas further. The good news on natural gas is that those methane leaks can be reduced. Gas producers can employ a range of technologies, from better pipeline maintenance to dry seals on compressors, that can reduce the amount of methane escaping into the air. The Clean Air Task Force estimates that “more than half of [the leaked methane] could be eliminated, in just a few years, at little or no cost to the industry.” That would make natural gas look a lot better from a climate perspective. Yet the industry will actually need to use these technologies. Currently, the EPA is proposing new rules on fracking wells that would help curb leaks from drilling.¶ 6) **Natural gas is still a fossil fuel and** can’t, on its own, avert significant global warming. The International Energy Agency has outlined some “golden rules” for natural-gas production that include plugging those pesky leaks at relatively low cost. If all those rules came to pass and natural gas use surged around the world, displacing coal in countries like China and India, then the IEA estimates that worldwide greenhouse gases would be about **1.3 percent lower** in 2035. That’s a real dent, though only a partial one. (See Andrew Revkin for a longer look at what would happen if China shifted from coal to gas.)¶ Now, if this was the only change made to our energy system, the IEA estimates that the world would still be on track to increase atmospheric carbon emissions to about 650 parts per million, “a trajectory consistent with a probable temperature rise of more than 3.5°C in the long term, well above the widely accepted 2°C target.” In other words, relying solely on natural gas to clean up emissions would put the world on pace for global warming that Tyndall Center director Kevin Anderson says is “likely to be beyond ‘adaptation.’ ”¶ This basically comes down to what Bill McKibben has called the “new math” of global warming. The best climate science suggests that world can only emit about 500 more gigatons of carbon by mid-century if we want a shot at staying below that 2°C threshold. Even if natural gas displaced coal entirely, we’d likely still reach that point soon (albeit at a slower pace).

#### No positive feedbacks---this takes out 100% of the impact to warming

Fritz Vahrenholt 12, Honorary Professor of chemistry at the University of Hamburg, former Umweltsenator in the German Ministry for Environment, Scientific Reviewer for the 2010 IPCC, June 18, 2012, “Global warming: second thoughts of an environmentalist,” The Telegraph, online: http://www.telegraph.co.uk/comment/9338939/Global-warming-second-thoughts-of-an-environmentalist.html

Furthermore, what is little known is that CO2 also requires a strong amplifier if it were to aggressively shape future climate as envisaged by the IPCC. CO2 alone, without so-called feedbacks, would only generate a moderate warming of 1.1°C per CO2 doubling. The IPCC assume in their models that there are strong amplification processes, including water vapour and cloud effects which, however, are also still poorly understood, like solar amplification. These are the shaky foundations for the IPCC's alarming prognoses of a temperature rise of up to 4.5°C for a doubling of CO2.

In the last 10 years the solar magnetic field dropped to one of its lowest levels in the last 150 years, indicating lower intensity in the decades ahead. This may have contributed to the halt in global warming and is likely to continue for a while, until it may resume gradually around 2030/2040. Based on the past natural climate pattern, we should expect that by 2100 temperatures will not have risen more than 1°C, significantly less than proposed by the IPCC.

Climate catastrophe would have been called off and the fear of a dangerously overheated planet would go down in history as a classic science error. Rather than being largely settled, there are more and more open climate questions which need to be addressed in an impartial and open-minded way.

# 2NC

## Manufacturing DA

### 2nc overview

#### Independently turns economy

Boushey 12 – Heather Boushey, Senior Economist, Center for American Progress Action Fund, July 19th, 2012, "Testimony before the U.S. House of Representatives Committee on Ways and Meanson Tax Reform and the U.S. Manufacturing Sector" waysandmeans.house.gov/uploadedfiles/boushey\_testimony.pdf

**Having a strong manufacturing industry in the United States should be at the top of our national economic agenda. Without a vibrant and innovative manufacturing base,** we will not be a global leader **for long. Moreover, as more of our energy** future will rely on high-tech manufacturing**, our** economic competitiveness will be even more closely aligned with our ability to be an innovator and producer of manufactured goods**.**¶ Further, this is an urgent national issue and one of those cases where success begets success. Economists have begun to study and show that the “industrial commons” matters for innovation and the extent to which we allow manufacturing processes to continue to go overseas, we only make it that much harder to regain our place as a global leader.11 As my colleagues Michael Ettlinger and Kate Gordon have put it, “the cross-fertilization and engagement of a community of experts in industry, academia, and government is vital to our nation’s economic competitiveness.”12¶ Manufacturing is not only a key part of our economy, but moving forward it will remain critical to our nation’s economic vitality¶ **The U.S. manufacturing sector is still a force internationally and an important part of our economy, despite employment losses and the relative rise in manufacturing in other countries over the past few decades**.13 **Last year, manufacturing contributed over** $1.8 trillion **to U.S.** g**ross** d**omestic** p**roduct, or about** 12 percent of the economy.14 Two years ago, manufacturing accounted for 60 percent of all U.S. exports.15 In 2008, the United States ranked first in the world in manufacturing value added, and it was the third largest exporter of manufactured goods to the world, behind only China and Germany and ahead of Japan and France.16 Between 1979 and 2010 manufacturing output per hour of labor in the United States increased by an average of 4 percent annually, and the United States has one of the world’s most productive workforces.17 Moreover, in 2009 there were 11.8 million direct jobs in manufacturing and 6.8 million additional jobs in related sectors.18 Put another way, one in six U.S. private-sector jobs is directly linked to manufacturing.19¶ Yet the industry suffered declines in the 2000s. The U.S. share of worldwide manufacturing value added dropped from 26 percent in 1998 to less than 20 percent in 2007, and we have gone from being a net exporter of manufactured goods in the 1960s to a net importer.20 Manufacturing as a share of U.S. GDP has declined from more than 15 percent in 1998 to 11 percent in 2009.21 And jobs in U.S. manufacturing declined from 17.6 million in January 1998 to 11.5 million in January 2010.22 And although the manufacturing sector has gained jobs in every month since then, for a total of 504,000 jobs as of June 2012, its share of total employment is down from 16.8 percent in 1998 to 10.8 percent today.23¶ These trends matter because the United States needs a strong manufacturing sector. **Manufacturing** provides good, middle-class jobs; **propels U.S. leadership in technology and innovation**, which is critical to our economic growth and vitality; and is important to balancing the trade deficit, as well as important for our nation’s long-term national security. The manufacturing sector has historically been a source of solid, middle-class jobs and it continues to be so today. **The average manufacturing worker earns a weekly wage that is 8.4 percent higher than non-manufacturing workers,** taking into account worker and job characteristics that influence wages, including unionization.24 **Economist Susan Helper and her colleagues conclude** that the economic evidence points to the fact that “the main reason why manufacturing wages and benefits are higher than those outside of manufacturing is that manufacturers need to pay higher wages to ensure that their workers are appropriately skilled and motivated.” 25 U.S.-based **manufacturing underpins a broad range of jobs in other industries,** including higher skill service jobs such as accountants, bankers, and lawyers, as well as a broad range of other jobs such as basic research and technology development, product and process engineering and design, operations and maintenance, transportation, testing, and lab work.26 Compared to jobs in other economic sectors, manufacturing jobs have the highest “multiplier effect**,” that is, the largest effect on the overall economy for each job created, relative to jobs in other industries.** To put this in perspective, each job in motor vehicle manufacturing creates 8.6 indirect jobs, each job in computer manufacturing creates 5.6 indirect jobs, and each job in steel product manufacturing creates 10.3 indirect jobs.27¶ Manufacturing is also important because it fuels the United States’ leadership in technology and innovation, which are critical to maintain for our future economic competitiveness.28 Manufacturing firms are more likely to innovate than firms in other industries: **Research from the National Science Foundation finds that 22 percent of manufacturing companies are active innovators compared to only 8 percent of nonmanufacturing companies.**29 This number is even higher for specific sectors within manufacturing. For example, in computer and electronic products manufacturing, 45 percent of companies are product innovators and 33 percent are process innovators.30 Manufacturing firms also **perform the vast majority of private research and development**: Despite comprising just 12 percent of the nation’s GDP in 2007, manufacturing companies contributed 70 percent of private research and development spending.31 ¶ In addition to what manufacturers spend on innovation, there is **increasingly strong empirical evidence showing a tight link betweeninnovation and manufacturing production.** Economic research now shows that the United States will not likely be able to keep the highly skilled technical jobs if the production jobs go overseas. Harvard Business School professors Gary Pisano and Willy Shih have written about the decline of the “industrial commons” in the United States: the collective R&D, engineering, and manufacturing capabilities that mutually reinforce each other to sustain innovation.32 **For many types of manufacturing,** geographic proximity is key **to having a strong “commons,” and they point to evidence showing that there are few hightech industries where the feedback loop from the manufacturing process is not a factor in developing new products.**33 As they put it, “product and process innovation are intertwined.” Pisano and Shih point to the example of rechargeable batteries as a product where innovation followed manufacturing. Rechargeable battery manufacturing left the United States many years ago, leading to the migration of the batteries commons to Asia. Now new technology (batteries for hybrid and electric vehicles) are being designed in Asia where the commons are located. I’d draw your attention to a January New York Times article on China’s increasing investment in research and development, which asked, “**Our global competitiveness is based on being the origin of the newest, best ideas.** How will we fare if those ideas originate somewhere else?”34

### 2NC---UQ---Manufacturing

#### Manufacturing is booming from natural gas—only our evidence cites long-term trends

Marks 12 (Jay, Energy Reporter for the Oklahoman, “U.S. manufacturing sector prospers with natural gas boom”, 9/21, http://newsok.com/u.s.-manufacturing-sector-prospers-with-natural-gas-boom/article/3711511#ixzz27yadz68U)

America's booming natural gas production has drawn countless manufacturers back to the United States, experts said Thursday at Shale Gas Insight 2012.

Paul Battista, business development manager for Sunnyside Supply Inc., discusses some of the natural gas equipment his company manufactures and sells. Photos by Adam Wilmoth, The Oklahoman

Low natural gas prices have lingered **due to the glut of the commodity, making the country an attractive market for manufacturers once again.**

“Anyone that uses a lot of electricity, and anyone that uses natural gas as a feedstock, will want to be back in the United States of America,” said Barry Smitherman, chairman of the Texas Railroad Commission.

Martha Gilchrist Moore, senior director of policy analysis and economics at the American Chemistry Council, said a 2011 study showed the game-changing potential of natural gas and natural gas liquids.

Ethane, a natural gas liquid, is a key ingredient in many petrochemical products like plastics and other synthetic fibers.

“One of my colleagues refers to it as the secret sauce of the chemical industry,” which is the nation's largest natural gas user, Moore said.

She said the American Chemistry Council study showed a 25 percent increase in the ethane supply would result in $132 billion in new economic output after an investment of $16 billion. It would also create more than 40,000 new jobs for the chemical industry and its suppliers.

Moore said the U.S. likely will reap more benefits than the study indicated after hearing IHS Consulting's Andrew Swanson predict a 40 percent increase in natural gas liquids production by 2020.

Swanson, managing director of business development for IHS, said low-priced natural gas and natural gas liquids are attractive to manufacturers seeking cost certainty. Ethane, propane and butane are key feedstocks for many of them.

Chemical companies in the U.S. can “crack” ethane to turn it into ethylene rather than relying on more expensive naphtha. Swanson said that shows the “fundamental competitiveness” this country enjoys in that market.

Swanson said lower prices for natural gas liquids have led to a “flood” of announcements in the chemical industry, with companies planning to add 11 billion tons of new ethylene production capacity.

Most of those projects are located along the Gulf of Mexico because of pre-existing infrastructure investments there, but Shell has announced plans to build an ethane cracker in western Pennsylvania.

Alan Walker, secretary of the Pennsylvania Department of Community and Economic Development, said that was exciting news for the state, with the potential for additional facilities in the region because of its abundant natural gas resources.

“If we use it right and manage it right, we're looking at at least a 100-year supply here in Pennsylvania,” Walker said.

Natural gas may be more commonly recognized as a versatile fuel that can be used for electricity, heating and transportation. It also can be used directly by manufacturers, Walker said.

“It can be the dawn of a new industrial revolution, but only if we allow the industry to develop,” he said.

Swanson said rising natural gas production also offers lucrative opportunities for companies that use butadiene or specialize in gas-to-liquids processes that turn natural gas into gasoline or diesel fuel.

#### Manufacturing is booming—natural gas is key

Flynn 12 (Phil, senior energy analyst for The PRICE Futures Group and a Fox Business Network contributor, “Low natural gas prices propelling US manufacturing, taxes suffer”, 5/2, http://www.futuresmag.com/2012/05/02/low-natural-gas-prices-propelling-us-manufacturing)

So why is the US manufacturing sector shinning as compare the EU? Well one reason has to be the historically low natural gas prices. The Impact that new production techniques are having on the manufacturing sector cannot be underestimated. Because of the hard work of this industry and cheap gas this country will create **hundreds of thousands of jobs.** In Europe where gasoline prices are at record highs and natural gas prices are five times the US price and almost ten times in China. Bloomberg says that the fuel is a particularly critical input for the petrochemical and refining industry, giving U.S. firms a big cost advantage over international competitors, as much as **70 percent** over manufacturers in South Korea and Europe. Whether cheap natural gas is propelling any of the strong job growth in the manufacturing sector over the past couple years is debatable. It’s certainly making a lot of manufacturers more profitable.

**This fact has unleashed the biggest US manufacturing boom in decades.** Take for example the US steel industry. Reuters News reported that, "America’s steel industry, for decades a symbol of industrial decline, is betting on natural gas to make it more competitive against foreign producers. U.S. Steel Corp and Nucor Inc the two largest U.S. steel producers, are changing their traditional manufacturing processes as relatively cheap domestic natural gas supplies become more plentiful. Some experts believe the new techniques will not only allow steelmakers to cut costs and lower selling prices at home, but also give U.S. companies a chance to compete with Japanese, South Korean and European rivals for a slice of the export pie. In the Chemical industry as reported by USA Today there are nearly 30 chemical plants proposed in the U.S. in the next five years, mainly due to cheap natural gas. The projects would expand U.S. petrochemical capacity by 27% and employ 200,000 workers at the factories and related suppliers which is a major turnaround. As U.S. natural gas prices soared in the late 1990s, chemical makers moved overseas, laying off 140,000 employees.

### 2NC---Key to Manufacturing

#### Higher exports crush the manufacturing industry—large magnitude key

Cicio 12 (Paul N. Cicio – President The Industrial Energy Consumers of America, association of leading manufacturing companies. “Re: Hamilton Project: “A Strategy for U.S. Natural Gas Exports” by Michael Levi,” Industrial Energy Consumers of America, July 16, 2012, http://www.ieca-us.com/wp-content/uploads/07.16.12\_IECA-Response-to-Brookings.pdf)

As an organization whose member companies are exclusively large industrial consumers of natural gas and natural gas-fired electricity, we felt compelled to comment on the recent Hamilton Project report “A Strategy for U.S. Natural Gas Exports” by Michael Levi, published on June 13, 2012.¶ In our view, the report lacks an appreciation of the substantial opportunity that the domestic use of natural gas offers the U.S. economy **and the potential** significant negative implications **that large volumes of** liquefied natural gas (**LNG**) **exports present to consumers of natural gas and electricity.**¶There are now fourteen companies that have applied to the U.S. Department of Energy for approval to export waterborne LNG. Their combined capacity is 6.7 TCF per year, the equivalent of 27.6 percent of 2011 U.S. demand. For perspective, total U.S. demand from 2000 to 2011, increased by only 4.4 percent. Thus**, the magnitude of the potential export demand,** even without consideration to other growing U.S. demand from the manufacturing and power generation sector, **is very significant**. Even though we believe as you do, that the U.S. technically recoverable reserves of natural gas have increased, **the gravity of such a substantial increase in demand through exports has enormous potential negative economic implications for domestic consumers of natural gas** and electricity. Given the potential significant implications to manufacturing competitiveness, we at IECA welcome the opportunity to collaborate with Brookings wherever possible to explain these concerns.¶ In regards to using natural gas for export as LNG, IECA supports free trade. At the same time, affordable, abundant natural gas is critical to U.S. manufacturing growth, which in turn is critical to the U.S. economy. The manufacturing sector uses one-third of all of the natural gas and one-third of all electricity (of which one-third is produced from natural gas) which fuels the employment of 12 million high-paid workers. As with any resource that is critical to America's economic growth, any decision to approve the export of natural gas should include a rigorous analysis of the potential impact on the domestic economy and job creation, and place a high priority on the manufacturing sector. Unfortunately, that crucial and needed rigorous analysis of impacts to the manufacturing sector cannot be found in the Hamilton Project papers on natural gas, thereby causing the careful observer to question all of its conclusions.¶ Our specific concerns with the report are as follows:¶ 1. The report does not provide a true comparison of the economic benefits of natural gas exports versus using natural gas in value-added manufactured products.¶ The paper’s biggest omission is a full discussion of the opportunity that natural gas used in manufacturing brings to the U.S. economy. **Affordable and abundant natural gas is vital to the recent renaissance in the nation’s manufacturing sector**. This renaissance has already contributed to up to a half million new American jobs. In fact, **for every manufacturing job created, three to five additional jobs across the broader economy are also created.** Natural gas is used as a fuel for the entire manufacturing sector, to make nitrogen fertilizer, and it is also used as a raw material for the production of chemicals that are converted into an immense array of products that are used every day. Manufacturing natural gas consumption creates far more jobs per unit of gas consumed than any other application. The chemical industry alone has estimated that over $35 billion dollars of U.S. investments will be made by abundant, affordable supplies of natural gas.¶ 2. The report mistakenly assumes that domestic demand will remain static.¶ The report assumes that the domestic demand picture will remain static, when in fact it will not. The EIA AEO demand forecast may have contributed to Brookings’ view that domestic consumption will increase only slightly by 2020. EIA’s forecast calls for demand from 2012 to 2020 to increase by only .45 MCF, or only 1.8 percent. The EIA base case does not include:¶  The impacts of pending EPA regulations on the electric utility industry that could shut down up to 70 GW of coal-fired power plant capacity and increase use of natural gas-fired power generation.¶  The pending EPA Industrial Boiler MACT that will result in the conversion of industrial coal-fired boilers to natural gas.¶  Petrochemical plant announcements that are estimated to create around 3.0 TCF per year of demand.¶  Increased pipeline exports to Mexico and increased use of natural gas as a transportation fuel.¶ IECA calculations of domestic consumption, plus the 6.7 TCF potential export demand, equates to around a 50 percent increase by 2020. Exports of that magnitude, on top of a growing domestic demand, could affect price more strongly than portrayed in the Hamilton Project papers. Although this is not a comprehensive list, it clearly demonstrates that U.S. demand is poised to increase dramatically.¶ 3. The report inaccurately states that natural gas exports are a good thing for the manufacturing sector because it raises natural gas prices and reduces consumption.¶ The report states, “Consider first one billion cubic feet of daily LNG trade. Roughly 200 million cubic feet of natural gas will shift from the domestic market to exports. Producers will make $80 million to $90 million off these sales. At the same time, higher prices will spur lower domestic natural gas consumption in power generation and industry [emphasis added], which will offset that amount by approximately $4 million to $7 million.”¶ **Exports are a form of demand.** Higher relative demand increases prices**.** Higher demand increases the price of natural gas, natural gas feedstock, natural gas-fired electricity, and directly impacts manufacturing competitiveness that will threaten jobs and economic growth.¶ 4. Jobs created by natural gas export facilities are small, relative to the opportunities to increase manufacturing jobs. Higher resulting natural gas prices will negatively impact U.S. manufacturing employment and ultimately additional jobs across the broader economy as well.¶ The report says that “Building new LNG export facilities would create a substantial number of temporary construction jobs. Cheniere estimates that its 2.2 billion cubic feet per day facility will take roughly two years to build and support roughly 3,000 jobs at its peak (Oil & Gas Monitor). Scaling this up suggests that allowing LNG exports could lead to as many as 8,000 temporary construction jobs if enough capacity for six billion cubic feet of daily exports was developed in the next several years.”¶ Three thousand to eight thousand temporary jobs pale in comparison to the potential to create millions of manufacturing jobs. As previously mentioned, for every one manufacturing job created, three to five additional jobs are created in the broader economy.¶ **The paper also does not address the potential loss of jobs if the price of natural gas rises and destroys industrial demand and the manufacturing jobs behind that demand.**¶5. Global price transparency and market-based pricing is not a benefit for domestic consumers of natural gas. U.S. consumers have price transparency. **Prices set by global demand means higher prices**.¶ The report says that “U.S. natural gas exports can also provide a platform for more effective U.S. foreign and trade policy. To that end, the United States should use foreign access to U.S. gas exports as leverage in trade negotiations, and actively seek to steer global gas trade toward greater transparency and market-based pricing.”¶ A potential negative consequence of significant increases of exports of natural gas is that someday the domestic market price will be tied to global demand, just as crude oil is today. It is not to America’s advantage to have our natural gas price rise every time demand in China or India increases**. The gap between the domestic price of natural gas and the price of natural gas in other countries is a newfound competitive advantage for the U.S.**¶6. The report does not acknowledge that a host of threats could slow, if not derail, shale natural gas production.¶ The report assumes that an increase in production of natural gas is a given, it is not. There are at least three broad categories of serious barriers that are real and in play, including:¶  Public opinion concerns with shale drilling and hydraulic fracturing¶  State and federal government regulation¶  Actions by environmental organizations whose stated objective is to slow, if not stop,¶ drilling and the use of natural gas for power plants¶ 7. **Increased demand through LNG exports does not help the manufacturing sector.**¶The report also claims that increased demand for natural gas through LNG exports will actually boost the manufacturing sector because increased production for exports will create more ethane, a component of the natural gas extracted from the ground. The report does not mention, however, that LNG would likely be exported to markets that leave the ethane in the gas. Therefore, any incremental gas production from LNG exports would not necessarily result in a greater ethane supply for the chemical industry. Furthermore, LNG exports are not a prerequisite for the production of more natural gas liquids (NGLs). As ethane is currently more highly valued than natural gas, there is a clear economic incentive for producers to shift production to NGL rich plays. This is already occurring in the marketplace today.¶ Conclusion¶ IECA is not opposed to exports of natural gas. However, when all of the components are assessed, we are convinced, and believe others will agree, that **domestic consumption of natural gas is a far superior economic alternative for our country and for the manufacturing sector**. The U.S. has a once-in-a-generation opportunity to fully utilize natural gas resources as a competitive advantage to create millions of high paying new manufacturing jobs and value-added exports. Large volumes of natural gas exports in the near term are not consistent with this vision. We find that natural gas producers are agnostic as to whether they derive their revenue from exports or domestic sales. Either way, they produce and sell more natural gas. This is not so for American manufacturers.¶ We hope we have conveyed to you why we think the indiscriminate export of natural gas is not the best use of a strategic commodity.¶ To that end, we encourage you to consider actions that remove barriers to greater use of natural gas in the manufacturing sector, and would be happy to work with you to help educate the public on this matter. Doing so would be a win-win for producers and consumers alike.

#### There’s a link differential—plan leads to much higher, sharper price increases

EIA 12 (Energy Information Administration, "Effect of Increased Natural Gas Exports on Domestic Energy Markets as requested by the Office of Fossil Energy," January 2012, [www.eia.gov/analysis/requests/fe/pdf/fe\_lng.pdf](http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf))

Export scenarios – wellhead price changes under the Reference case.¶ Increased exports of natural gas lead to increased wellhead prices in all cases and scenarios. The basic pattern is evident in considering how prices would change under the Reference case (Figure 3):¶ • The pattern of price increases reflects both the ultimate level of exports and the rate at which increased exports are phased in. In the low/slow scenario (which phases in 6 Bcf/d of exports over six years), wellhead price impacts peak at about 14% ($0.70/Mcf) in 2022. However, the wellhead price differential falls below 10 percent by about 2026.¶ • In contrast, **rapid increases in export levels lead to large initial price increases** that would moderate somewhat in a few years. In the high/rapid scenario (which phases in 12 Bcf/d of exports over four years), **wellhead prices are about 36 percent higher** ($1.58/Mcf) in 2018 than in the no-additional-exports scenario. But the differential falls below 20 percent by about 2026. The sharp projected price increases during the phase-in period reflect what would be needed to balance the market through changes in production, consumption, and import levels in a compressed timeframe.¶ • Slower increases in export levels lead to more gradual price increases but eventually produce higher average prices, especially during the decade between 2025 and 2035. The differential between wellhead prices in the high/slow scenario and the no-additional-exports scenario peaks in 2026 at about 28 percent ($1.53/Mcf), and prices remain higher than in the high/rapid scenario. The lower prices in the early years of the scenarios with slow export growth leads to more domestic investment in additional natural gas burning equipment, which increases demand somewhat in later years, relative to rapid export growth scenarios.¶ Export scenarios—wellhead price changes under alternative baseline cases¶ The effect of increasing exports on natural gas prices varies somewhat under alternative baseline case assumptions about resource availability and economic growth. However, the basic patterns remain the same: higher export levels would lead to higher prices, **rapid increases in exports would lead to sharp price increases**, and slower export increases would lead to slower but more lasting price increases. But the relative size of the price increases changes with changing assumptions (Figure 4).

## Spot Pricing DA

### 2nc overview v mary wash

#### That’s existential

Nick Bostrom 2, winner of the Gannon Award, March, Existential Risks: Analyzing Human Extinction Scenarios and Related Hazards, Journal of Evolution and Technology, p. http://www.nickbostrom.com/existential/risks.html

A much greater existential risk emerged with the build-up of nuclear arsenals in the US and the USSR. An all-out nuclear war was a possibility with both a substantial probability and with consequences that might have been persistent enough to qualify as global and terminal. There was a real worry among those best acquainted with the information available at the time that a nuclear Armageddon would occur and that it might annihilate our species or permanently destroy human civilization.[4] Russia and the US retain large nuclear arsenals that could be used in a future confrontation, either accidentally or deliberately. There is also a risk that other states may one day build up large nuclear arsenals. Note however that a smaller nuclear exchange, between India and Pakistan for instance, is not an existential risk, since it would not destroy or thwart humankind’s potential permanently. Such a war might however be a local terminal risk for the cities most likely to be targeted. Unfortunately, we shall see that nuclear Armageddon and comet or asteroid strikes are mere preludes to the existential risks that we will encounter in the 21st century.

### UQ --- Oil Indexation Now

#### UQ – no decoupling in status quo

EER 11 (European Energy Review, "Pricing Mechanisms for Natural Gas Factsheet" December 4, 2011, www.europeanenergyreview.eu/data/docs/Viewpoints/081120 Factsheet - Pricing mechanism for natural gas in Europe.pdf)

For the foreseeable future**, a transition to free-floating gas**¶ **prices could not be accomplished** simply because there is no¶ European reference point for gas prices. Europe’s gas¶ market remains fragmented, and the liquidity of the small¶ trading hubs in Continental Europe is too low for any of¶ them to provide a reference point.¶ The replacement of the existing system would be a major legal¶ and logistical challenge, given that **90% of the gas consumed in**¶ **Continental Europe is sold under long-term contracts with oil**¶ **price indexation**, many of which have recently been extended¶ beyond 2030.

#### 90% of gas is still priced on oil indexation

Hulbert 12 (Matthew Hulbert - Lead Analyst at European Energy Review, government consultant, Senior Research Fellow @ Netherlands Institute for International Relations, working on energy and political risk. Senior Energy Analyst at Datamonitor for global utilities. “Why America Can Make or Break A New Global Gas World,” 8/05/2012 http://www.forbes.com/sites/matthewhulbert/2012/08/05/why-america-can-make-or-break-a-new-global-gas-world)

The fact this price war is already **being fought out on a** daily basis **in the Atlantic and Pacific basin** is generally poorly understood by analysts, as is **the ‘vital supply side relationship’** between Russia and Qatar that will determine how these two worlds start to play out. Truth be told, the overall result remains uncertain, not because fundamentals don’t look promising, but **because countervailing political pressures to keep gas as a regional affair, rather than ‘global marriage’ remain formidable**. Overall liquidity is the core tool available to counteract Russia (et al) by making sure shale options are globally developed and LNG trains set in motion to enhance fringe supply. In large part that means the US, but given that 90% of gas is still traded on a regional, pipeline basis across the world, most producers will still look to long term contracts to get fields developed, infrastructure built, pipes welded, and even LNG tankers filled**. This historical legacy isn’t going to instantly lose contemporary resonance:** hence the real question isn’t whether long-term bilateral supply contracts will be struck. They will. But **what’s used as the pricing reference point** within them: spot market prices based on supply-demand fundamentals should be the increasingly logical answer. **The deeper gas markets get, the more credible independent benchmarks become.**

#### Pressure is temporary --- it’ll stay oil-indexed in the squo

Hegde and Fjeldstad 10 (Kjersti Hegde - Gas Sales Coordinator at TOTAL E&P NORGE AS, Business Analyst at Koppies & Stevens, Eirik Fjeldstad - Senior Portfolio Manager at Bergen Energi. "The future of European Long-Term Natural Gas Contracts," September 1, 2010, [www.bergen-energi.com/arch/\_img/9548380.pdf](http://www.bergen-energi.com/arch/_img/9548380.pdf))

This report is a response to the question “what is the future of the European¶ long-term natural gas contracts”? This is a question important question in today’s¶ market, and has already been discussed at length both in the business-and the¶ academic world. Based on the information collected in this report, the following¶ major findings have been identified:¶ **Current oversupply is not expected to last**¶Demand for gas is currently recovering, as the economies of large, European¶ countries are improving faster than first forecasted. Most scenarios are expecting¶ the demand to continue increasing, and that the market will become tight in, or¶ before, 2015.¶ Pressure on the oil-indexation is temporary¶ The current pressure on the long-term contracts is expected to continue until¶ the long-term contract prices and spot prices are trading at similar levels again.¶ Once demand recovers, the prices are also expected to improve. The supply¶ situation from 2015 is supporting a continuation of the long-term contracts, as the¶ market seems to tighten significantly. Many of the renegotiations of the long-term¶ contracts done in 2009 and 2010 will only last until 2012, which seems to support¶ this argument.¶ Higher degree of spot indexation in long-term contracts¶ Business sources are reporting that Gazprom and Statoil, amongst others, have¶ agreed to introduce a share of spot indexation in the long-term price formula. This¶ could symbolize a shift from the traditional model to a hybrid model, where¶ producers have to accept more flexible contractual terms.¶ Low liquidity on the European hubs¶ The European hubs have been increasing traded volumes over the last years,¶ but remains well below NBP. With the emergence of a number of European hubs,¶ neither will reach critical size, and therefore be able to compete with NBP.

### Ext Volatility

#### Decoupling doesn’t reduce prices --- just causes increased volatility

EER 11 (European Energy Review, "Pricing Mechanisms for Natural Gas Factsheet" December 4, 2011, www.europeanenergyreview.eu/data/docs/Viewpoints/081120 Factsheet - Pricing mechanism for natural gas in Europe.pdf)

The long-term comparison of the oil-indexed German Border Price (GBP) with the spot price of the most important gas trading hubs in North America (Henry Hub) and the UK (National Balancing Point) reveals that gas prices in the US and the UK continue to correlate with oil-indexed prices, even in the absence of any contractual peg. This usually occurs during periods when demand and supply are balanced.

However, the short-term volatility of gas prices is significantly higher on spot markets. This volatility creates arbitrage opportunities for gas traders and speculators, **but fails to lower prices for end consumers.**

On a joule-for-joule basis, the price of natural gas does not exceed 70 percent of the price of oil. This discount is explained by the superior properties of oil as a commodity. It is the fuel of choice in the transportation sector and can be stored and transported much easier than gas.

However, the gas price discount to oil prices is most likely to disappear. Liquefied natural gas (LNG) leads to a convergence of the commodity properties of oil and gas. In both cases, we are dealing with liquids that are shipped by tankers and poured into special tanks for storage. Gas-toliquids (GTL) are potentially capable of turning into a universal motor fuel that will replace oil. And gas has lower carbon emissions per thermal unit than oil or coal. In the long term, this development will strengthen the oil-gas tandem. In the short term, LNG is helping to make the world’s gas markets truly global. In the absence of competition from cheaper pipeline gas, Asian markets are attracting ever-greater volumes of relatively expensive LNG, which, in turn, are starting to serve as the price target for both sides of the Atlantic.

#### Hub pricing dramatically increases volatility

Stern and Rogers 11 (Jonathan Stern and Howard Rogers \*\*\*, “The Transition to Hub-Based Gas Pricing in Continental Europe,” March 2011, www.oxfordenergy.org/wpcms/wp-content/uploads/2011/03/NG49.pdf)

Concerns have been expressed that, **in comparison to the current oil-linked mechanism, hub based prices will substantially increase volatility.** In Figures 3-5 the degree of hub price volatility is evident, and this is unsurprising since one of the effects of the averaging process (described above) used to derive quarterly prices in long term contracts was to minimise such volatility to the maximum possible extent. To a degree, **increased price volatility is an** 16 **inevitable consequence** of the need to balance the market in the short term. However, small and medium sized customers will not be exposed to daily or monthly changes, since companies supplying the residential and small industrial and commercial sectors will use a variety of trading strategies to manage volatility and pass through a smoother price pattern to smaller customers. Larger industrial customers and power generators will often have in-house trading capabilities to optimise their own portfolios.

### AT NU --- European Shale

#### European gas won’t come online --- but liberalization makes spot prices more likely

IMF 12 ("IMF Study Examines Changing Patterns in Global Gas Markets," February 1, 2012, www.imf.org/external/pubs/ft/survey/so/2012/int020112a.htm)

IMF Survey online: What is your advice to policymakers in countries like Algeria?

De Bock: Well, the **large-scale production of unconventional gas in Europe is probably not imminent**. This is partly because of the controversy over the possible environmental effects from the technologies used to extract it. However, the recent European legislation to liberalize the gas market—as well as further political unrest in the Middle East and North Africa—could boost efforts to develop a European shale gas industry or a spot market for natural gas.

### Ext Russian Export Capacity

#### Russia could increase exports to Europe by a factor of 183

Paltsev 11 (Sergey Paltsev –Phd in Econ, Principal Research Scientist at MIT Energy Initiative and Joint Program on the Science and Policy of Global Change. “Russia’s Natural Gas Export Potential up to 2050,” July 2011, MIT Center for Energy and Environmental Policy Research) \*Tcf=trillion cubic feet

As mentioned above, in the next ten years Russia’s gas export potential to Europe is about 1011 Tcf, mostly based on pipeline-based exports. **The actual sales to Europe were 4.5-5.5 Tcf** at the end of the 2000s. It looks like Russia has a choice to make for a more distant future - to continue to rely on pipelines for gas transportation, or to start moving to LNG markets more aggressively.

#### Russian capacity is unrivaled --- they can easily ramp up production

Hartley and Medlock 8 (Peter Hartley – PhD, Baker Institute Rice Scholar, Kenneth Medlock – PhD, Fellow in Energy Studies, Baker Institute. “The Future of Russian Natural Gas Exports,” James A Baker III institute for Public Policy, May 2008, http://www.bakerinstitute.org/publications/IEEJRussNatGas-MedlockHartleyV3.pdf)

**Russia’s status as a current and future energy producer is** close to **unrivaled**. It is home to the world’s largest natural gas reserves, and is also currently the world’s largest natural gas producer. Moreover, due to its unrivaled natural gas resource base, **Russia is capable of increasing its future production**. As of January 1, 2007, the *Oil and gas Journal* (OGC) estimates of Russian proved reserves of natural gas were 1,680 trillion cubic feet (tcf) (or 47,570 billion cubic meters (bcm)), and according to the United States Geologic Survey (USGS), the mean estimate of undiscovered, technically-recoverable natural gas resource is 1,167 tcf (33,074 bcm), with the estimated resource in place at more than 3,300 tcf (93,400 bcm). **Russia therefore has the potential to enhance its status as a global natural gas supplier**. According to the U.S. Energy Information Administration (EIA), in 2006 Russian dry gas production was 23.2 tcf (657 bcm) and exports equaled 7.8 tcf (220.9 bcm). To put this into perspective, global dry gas production was 104.8 (2,968 bcm) in 2006, meaning Russia accounted for more than 20 percent of global production with Europe its primary export market.

#### Russia has millions of barrels in capacity for expanding natural gas

Reuters 12 ("Home News Business Opinion Arts & Ideas Beyond Moscow Q&A Environment London 2012 Share on facebook Share on twitter Share on email Share on print Share on reddit Share on stumbleupon Share on favorites More Sharing Services 6 Horizontal Drilling Boom Under Way," 26 August 2012, www.themoscowtimes.com/business/article/horizontal-drilling-boom-under-way/467118.html)

**The use of horizontal drilling will grow faster in Russia than in the United States,** where it is helping to drive a boom in shale oil and gas, the chief executive of Eurasia Drilling said.¶ "Growth in the U.S. will not be so huge as the growth of horizontal drilling in Russia," Alexander Djaparidze, who helped found the company in a buyout of LUKoil's drilling assets, said in an interview.¶ In the space of last year, Eurasia Drilling, which acquired Schlumberger's Russian drilling assets in April 2011, reported that horizontal drilling doubled from 2010 to nearly 900,000 meters.¶ This year it has told investors it will increase, in line with overall drilling volumes, at about a rate of 15 percent.¶ Horizontal drilling is technically more challenging and more expensive than conventional vertical drilling but taps hydrocarbon reservoirs more effectively and yields better flows.¶ Russian oil companies, faced with annual decline rates of 2 percent in their West Siberian home base, where Soviet-era fields generate 85 percent of the country's 10.3 million barrel per day output, have stepped up the use of unconventional technologies to secure Russia's position as the world's top producer.¶ Beyond the conventional plays of Western Siberia **lies the Bazhenov Formation**, potentially the world's richest oil shale, which the government hopes to unlock using tax breaks that it announced earlier this year to coax companies to invest in cutting edge drilling technologies.¶ **The Bazhenov was touted as "80 times bigger than the Bakken**" and could yield 1 million barrels per day by 2020, research firm Bernstein has said — referring to the prolific Bakken shale deposit in the northern United States.¶ Further out are the Arctic seas, where Rosneft will start exploring in 2015 under a partnership deal with ExxonMobil. It has similar deals with Norway's Statoil and Italy's Eni.¶ New awareness of the potential to boost production on the part of the government, concerned to sustain hydrocarbon output that yields more than 50 percent of budget revenues, has made analysts bullish on drillers operating in Russia.¶ "We see the oil service companies as the major beneficiaries of the upcoming exploration drive into offshore and hard-to-access deposits," Merrill Lynch said in a report.¶ "Meanwhile, Russia's conventional drilling should become deeper and heavier, supporting current domestic providers. We see Eurasia Drilling and [competitor] CAT Oil as the main long-term beneficiaries of the upcoming drilling spree."¶ Enthusiasm for shale is controversial in oil circles, where some argue that **the country has a long way to go to before it exhausts conventional resources**, both in Western Siberia and at greenfields in the east. These can be unlocked with increased horizontal drilling and by the hydraulic fracturing techniques that have come to be associated with the shale boom.

## South China Sea adv

### 2nc aggression

#### China needs stability in the South China Sea—no aggression

Andrew H. Ring 12, Lieutenant Commander in the U.S. Navy and former Federal Executive Fellow at the Weatherhead Center for International Affairs at Harvard University, "A U.S. South China Sea Perspective: Just Over the Horizon," July 4, Weatherhead Center for International Affairs, projects.iq.harvard.edu/sites/projects.iq.harvard.edu/files/fellows/files/ring.pdf

China has maintained peaceful relations with the fourteen countries it shares land borders with for over thirty years. This peaceful environment helped China’s rise. It allowed a majority of China’s resources to be poured into economic development versus defense infrastructure, and encouraged foreign investment and trade. China’s continued ascendancy will depend in part on Chinese leaders’ ability to maintain this peaceful environment and effectively address the emerging domestic issues (e.g., the demands of the rising middle class, entitlements, and its aging population). With its growing sphere of influence comes a need, and some may say, a responsibility, to maintain a peaceful environment within the South China Sea as well. China realizes that needless aggressive military action against its Southeast Asian neighbors will likely draw world powers into the South China Sea dispute.

#### Cooperation and lack of motivation prevents conflict

Pradt ’12 – PhD candidate at the Freie Universität of Berlin (Tilman, “ASIA'S NEW GREAT GAME? THE GEOPOLITICS OF THE SOUTH CHINA SEA,” Political Reflection, Vol. 3, No. 1)

Hence, are we attending the beginning of a new round of The Great Game in Asia, this time in the location of the SCS? As this text briefly surveyed, there are various interests at stake and several big and great powers involved, arguably too many for such a small area (especially, when concentrating on the bottleneck of the SCS, the Strait of Malac-ca). But by analyzing the motivations behind the big players’ engagement (i.e., the United States, China, and India) there is reason to believe that a potentially tragic zero-sum Great Game is still avoidable.¶ First, the US has not a real interest in permanently (and substantially) upgrading its military presence in the region. Given the still severing US budget situation and the persistent security situation in the Middle East and Central Asia, policy-makers in Washington are trying to reduce its forces de-ployed to foreign areas not to enlarge them by opening up a new theatre. Plus, the US is mainly interested in the security of the sea lanes and its guaranteed free passage, therefore President Obama’s push on the littoral states to solve their SCS disputes. The US is not interested in confront-ing China directly but to put pressure on Beijing to be more conciliatory in case of the SCS dis-putes. The deployment of US Marines to Darwin is merely presenting the stick not using it (imagine Beijing’s reactions to the US establishing a mili-tary base in Vietnam).¶ Beijing, on the other hand, will now take pains to somehow ease the situation in the SCS and to regain trust among its neighbours of the ASEAN. China has to accept that the US will now sit at the table of future rounds of territorial discussions and China no longer can use its relative power in bilateral negotiations with small ASEAN states. This is probably hard to swallow for Chinese policy-makers given their repeatedly stated premise that the SCS disputes shall be solely discussed among the regional states con-cerned. But in this changed situation, the contin-ued refusal to accept multilateral discussions will provoke further military build-up and confronta-tion in the SCS.¶ Finally, India got only involved because of perceived Chinese assertiveness in the Indian Ocean. India’s military build-up and assumed ambitions towards the SCS is a response to Chi-na’s actions in what India perceives as its territori-al waters. A reciprocal withdrawal will avoid fu-ture naval confrontations among the two Asian heavyweights.

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## Warming Adv

### Offense

#### Levi concludes neg – LNG Exports small impact on CO2 emissions – even advocates agree

Levi 12 (Michael Levi - senior fellow for energy and the environment at Council on Foreign Relations, director of CFR Program on Energy Security and Climate Change. 8/17/12, CFR, “Why Allowing Natural Gas exports is probably good for climate change,” <http://blogs.cfr.org/levi/2012/08/17/why-allowing-natural-gas-exports-is-probably-good-for-climate-change/>)

First one overarching point: The consequences of LNG exports for climate change will almost certainly be small. I asserted in my op-ed that they would probably be good. Regardless, though, they are not reason enough alone to say yes to exports. The strongest case for allowing exports is that saying no poses big risks to U.S. leverage in the WTO and NAFTA, with much broader ramifications for the U.S. economy and its standing in the world.

#### Exporting LNG increases warming --- any tradeoffs are overcome by leakage, and the energy intensive liquefying

Romm 12 (Joe Romm – PhD from MIT, Fellow at American Progress, editor of Climate Progress, previously assistant secretary of energy for energy efficiency and renewable energy. “Exporting Liquefied Natural Gas (LNG) Is Still Bad For The Climate — And A Very Poor Long-Term Investment,” August 16, 2012, http://thinkprogress.org/climate/2012/08/16/699601/exporting-liquefied-natural-gas-lng-bad-for-climate-poor-long-term-investment/)

The surge in U.S. production of shale gas is creating a surge in permit requests to build liquefied natural gas (LNG) terminals. That’s because the glut of U.S. gas has dropped domestic prices sharply below global price levels.¶ I explained back in June why “Exporting LNG Is Bad For The Climate.” But the New York Times has just run a misleading op-ed, “The Case for Natural Gas Exports,” so the issue clearly merits a revisit.¶ LNG Value Chain¶ The NY Times piece offers this paragraph as the sole defense to the well-known charge that LNG exports are bad for the climate:¶ At the same time, exports would likely reduce global greenhouse gas emissions. Moreover, the small price increases that would result from allowing exports would have at most a marginal impact on the use of natural gas as fuel for cars and trucks. Blocking exports wouldn’t push natural gas into automobiles — it would mostly keep it in the ground, because there would be less incentive to extract it.¶ The argument about cars and trucks is a red herring (at best) since replacing gasoline with natural gas in vehicles is pretty clearly a loser from a global warming perspective — and always will be – as a major 2012 Proceedings of the National Academy of Sciences study makes clear.¶ It is head-scratching to say the least to claim that exports would reduce greenhouse gas (GHG) emissions when the Times acknowledges that blocking exports would leave this fossil fuel in the ground! Burning natural gas releases GHGs. We need to slash global GHGs 50% in four decades merely to have a shot at keeping total warming anywhere near 2°C (3.6°F), a point beyond which risks to human civilization multiply exponentially.¶ Worse, natural gas extraction is leaky, and natural gas is mostly methane, a highly potent GHG (with some one hundred times the global warming potential of carbon dioxide over a 20-year period). Most of the new natural gas in this country comes from hydraulic fracturing, which is widely thought to be leakier than conventional gas extraction.¶ Worst of all, cooling natural gas to about −162°C (−260°F) and shipping it overseas for use in distant countries is costly and energy-intensive:¶ The process to bring the gas to such low temperatures requires highly capital intensive infrastructure. Liquefaction plants, specially designed ships fitted with cryogenic cooling tanks, regasification terminals and domestic transmission infrastructure all make LNG relatively expensive in construction and operational cost.¶ When you factor in the energy and emissions from this entire process, including shipping, you get a total life-cycle energy penalty of 20% or more. The extra greenhouse gas emissions can equal 30% or more of combustion emissions, according to a pretty definitive 2009 Reference Report by the Joint Research Centre of the European Commission, Liquefied Natural Gas for Europe – Some Important Issues for Consideration.¶ The NY Times piece actually makes this odd argument on behalf of LNG exports: “It will take years before any export terminals are up and running — in the meantime, producers and regulators should strengthen safeguards so that gas is extracted safely.”¶ But this is yet another reason why LNG exports make no sense. Why would we want to start massive exports of natural gas around the end of this decade, with costly new infrastructure that lasts until mid-century?¶ If avoiding catastrophic climate change is your goal, then spending huge sums on even conventional natural gas infrastructure is clearly not the answer, as a recent International Energy Agency report made clear:¶ The speciﬁc emissions from a gas-ﬁred power plant will be higher than average global CO2 intensity in electricity generation by 2025, raising questions around the long-term viability of some gas infrastructure investment if climate change objectives are to be met.¶ Duh! Or is that D’oh?¶ And as we’ve seen, LNG shipped from the U.S. is much worse from a GHG perspective than regular gas, so by the time a lot of new LNG terminals are up and running in this country, it seems likely that LNG-fired plants overseas will be have a higher GHG intensity than the average plant in the electric generation system needed to be anywhere near a non-catastrophic emissions path.¶ We do not want to build a global energy system around natural gas (see IEA’s “Golden Age of Gas Scenario” Leads to More Than 6°F Warming and Out-of-Control Climate Change). At the time, the UK Guardian‘s story put it well:¶ At such a level, global warming could run out of control, deserts would take over in southern Africa, Australia and the western US, and sea level rises could engulf small island states.¶ The extra emissions from LNG all but eliminate whatever small, short-term benefit there might be of building billion-dollar export terminals and other LNG infrastructure, which in any case will last many decades, long after a sustainable electric grid will not benefit one jot from replacing coal with gas.¶ Asserting any net benefit requires assuming the new gas replaces only coal — and isn’t used for, say, natural gas vehicles, which, as noted, are worse for the climate or that it doesn’t replace new renewables. If even a modest fraction of the imported LNG displaces renewables, it renders the entire expenditure for LNG counterproductive from day one. Remember, a major 2012 study on “technology warming potentials” (TWPs) found that a big switch from coal to gas would only reduce TWP by about 25% over the first three decades (see “Natural Gas Is A Bridge To Nowhere Absent A Carbon Price AND Strong Standards To Reduce Methane Leakage“). And that is based on “EPA’s latest estimate of the amount of CH4 released because of leaks and venting in the natural gas network between production wells and the local distribution network” of 2.4%. Many experts believe the leakage rate is higher than 2.4%, particularly for shale gas. Also, recent air sampling by NOAA over Colorado found 4% methane leakage, more than double industry claims.¶ A different 2012 study by climatologist Ken Caldeira and tech guru Nathan Myhrvold finds basically no benefit in the switch whatsoever — see You Can’t Slow Projected Warming With Gas, You Need ‘Rapid and Massive Deployment’ of Zero-Carbon Power. That study takes into account the near-term impact of the construction of new infrastructure.¶ BOTTOM LINE: Investing billions of dollars in new shale gas infrastructure for domestic use is, at best, of limited value for a short period of time if we put in place both a CO2 price and regulations to minimize methane leakage. Exporting gas vitiates even that limited value and so investing billions in LNG infrastructure is, at best, a waste of resources better utilized for deploying truly low-carbon energy. At worst, it helps accelerates the world past the 2°C (3.6°F) warming threshold into Terra incognita — a planet of amplifying feedbacks and multiple simultaneous catastrophic impacts.

#### Exports net increase emissions

EIA 12 (Energy Information Administration, "Effect of Increased Natural Gas Exports on Domestic Energy Markets as requested by the Office of Fossil Energy," January 2012, [www.eia.gov/analysis/requests/fe/pdf/fe\_lng.pdf](http://www.eia.gov/analysis/requests/fe/pdf/fe_lng.pdf))

While lower domestic natural gas deliveries resulting from added exports reduce natural gas related CO2 emissions, the increased use of coal in the electric sector generally results in a net increase in overall CO2 emissions. The exceptions occur in environments when renewables are better able to compete against natural gas and coal. However, when also accounting for emissions related to natural gas used in the liquefaction process, additional exports increase CO2 levels under all cases and export scenarios, particularly in the earlier years of the projection period. Table 2 displays the cumulative CO2 emissions levels from 2015 to 2035 in all cases and scenarios, with the change relative to the associated baseline case.

#### US exports cause warming---liquification causes methane leaks

Bloomberg 12 The Gas Is Always Greener When It Leaks Less Jun 13www.bloomberg.com/news/2012-06-13/the-gas-is-always-greener-when-it-leaks-less.html

A new escape route for methane will be opened as the U.S. begins exporting some of its natural-gas bounty. (With natural- gas prices at $9 per million BTU and higher in Europe and $17 in Asia, a new facility in Louisiana to liquefy gas for export is on the drawing board.) Methane can escape during liquefaction, shipping and regasification at the receiving end. All these leaks, too, have to be measured.

#### Only our evidence is comparative between the effects of CO2 v. Methane – methane contains much more carbon which means it has an amplifier effect on warming – we don’t have to win that very much is released to win the turn

Here’s more ev

Frongillo 12 Dominic Frongillo - deputy town supervisor of Caroline, Tompkins County, and founder of Elected Officials to Protect New York , “Wrong Time to Push Fracking,”August 15, 2012 <http://www.timesunion.com/opinion/article/Wrong-time-to-push-fracking-3788647.php>)

Why should this ring alarm bells for Cuomo and every New Yorker?

Far from being a climate solution, fracking may be a disaster. Research indicates the methane leakage may mean that fracking is worse for the climate than coal and oil, particularly in the short term.

Gas from fracking is mostly methane, a dangerous greenhouse gas that is up to 105 times more powerful at trapping heat in the atmosphere than carbon dioxide over 20 years. A recent United Nations Environment Program report shows that it is more urgent to reduce methane than CO2, given that methane is so much more powerful, has quicker climate impacts, and will trigger runaway climate change sooner.

In February, the journal Nature reported on one of the first studies to look at methane emissions from fracking, a Colorado study led by researchers at the National Oceanic and Atmospheric Administration. The study found 4 percent of gas drilled in fracking is venting directly into the atmosphere — even greater than the high-end estimate of the Cornell study and twice what was reported by the industry.

This is cause for grave concern. According to the Nobel Prize-winning Intergovernmental Panel on Climate Change, we must reduce our greenhouse gas emissions to avoid dangerous tipping points for the climate. Failing to do so will cause catastrophic impacts, far worse than the extreme heat and droughts this summer.

It may be that preventing hydraulic fracturing is crucial to stop a large new source of greenhouse gas emissions in New York. Fracking would release large amounts of methane that is now safety underground — cooking the planet further at the time when we most need to reduce methane emissions.

In Tompkins County, our Planning Department estimates that one well pad will release more climate pollution over its operational life than all of our county's 100,000 residents do in one year. Fracking may overwhelm and undermine the work of our governments, businesses, and institutions across the state to lessen our impact on the global climate.

New York State's Climate Action Plan interim report contains ambitious and necessary strategies to cut greenhouse gas emissions 80 percent by 2050. How would fracking in New York affect our ability to meet these targets?

#### Most qualified studies prove

IEA 12 International Energy Agency - World Energy Outlook Special Report on Unconventional Gas, “Golden Rules for a Golden Age of Gas,” May 29, 2012, http://www.worldenergyoutlook.org/media/weowebsite/2012/goldenrules/WEO2012\_GoldenRulesReport.pdf)

The production of unconventional gas also contributes to the atmospheric concentration of greenhouse gases and affects local air quality. In some circumstances, unconventional gas production can result in higher airborne emissions of methane, a potent greenhouse gas, of volatile organic compounds (VOCs) that contribute to smog formation, and of carbon dioxide (CO2) (from greater use of energy in the production process, compared with conventional production). Just how much greater these risks may be is uncertain: it depends critically on the way operations are carried out. On the other hand, there are potential net benefits from unconventional gas production, to the extent that, having been produced and transported to exacting environmental standards, it leads to greater use of gas instead of more carbon-intensive coal and oil.

In addition to the smaller recoverable hydrocarbon content per unit of land, unconventional developments tend to extend across much larger geographic areas. The Marcellus Shale in the United States covers more than 250 000 km2, which is about ten times larger than the Hugoton Natural Gas Area in Kansas – the country’s largest conventional gas producing zone. Moreover, areas with high unconventional potential are not always those with a strong or recent tradition of oil and gas industry activity; they are not necessarily rich in conventional hydrocarbons and in some cases there may have been little or no recent hydrocarbon production (and none expected). This tends to exacerbate the problem of public acceptance.

#### Triggers Ozone which increases warming

Matthews 12Nathan Matthews - Associate Attorney, Sierra Club Environmental Law Program. “SIERRA CLUB’S MOTION TO INTERVENE OUT OF TIME, PROTEST, AND COMMENTS,” 4/18/12, http://content.sierraclub.org/sites/default/files/documents/SC%20Mtn%20to%20Intervene%204-18-12.pdf)

Methane also reacts in the atmosphere to form ozone.29 As we discuss below, ozone is a major public health threat, linked to a wide range of maladies. Ozone can also damage vegetation, agricultural productivity, and cultural resources. Ozone is also a significant greenhouse gas in its own right, meaning that methane is doubly damaging to climate – first in its own right, and then as an ozone precursor. Volatile Organic Compounds (VOCs) and NOx: The gas industry is a major source of the ozone precursors VOCs and NOx.30 VOCs are emitted from well drilling and completions, compressors, pneumatic devices, storage tanks, processing plants, and fugitives from production and transmission.31 The primary sources of NOx are compressor engines, turbines, and other engines used in drilling and hydraulic fracturing.32 NOx is also produced when gas is flared or used for heating.33 VOCs and NOx contribute to the formation of ground‐level ozone (also referred to as smog). Smog pollution harms the respiratory system and has been linked to premature death, heart failure, chronic respiratory damage, and premature aging of the lungs.34 Smog may also exacerbate existing respiratory illnesses, such as asthma and emphysema, or cause chest pain, coughing, throat irritation and congestion. Children, the elderly, and people with existing respiratory conditions are the most at risk from ozone pollution.35 Significant ozone pollution also damages plants and ecosystems.36 Ozone also contributes substantially to global climate change over the short term. According to a recent study by the United Nations Environment Program (UNEP), behind carbon dioxide and methane, ozone is now the third most significant contributor to human‐caused climate change.37 As a result of significant VOC and NOx emissions associated with oil and gas development, numerous areas of the country with heavy concentrations of drilling are now suffering from serious ozone problems. For example, the Dallas Fort Worth area in Texas is home to substantial oil and gas development. Within the Barnett shale region, as of September 2011, there were more than 15,306 gas wells and another 3,212 wells permitted.38 Of the nine counties surrounding the Dallas Forth Worth area that EPA has designated as “nonattainment” for ozone, five contain significant oil and gas development.39 A 2009 study found that summertime emissions of smog‐forming pollutants from these counties were roughly comparable to emissions from motor vehicles in those areas.40 Oil and gas development has also brought serious ozone pollution problems to rural areas, such as western Wyoming.41 On March 12, 2009, the governor of Wyoming recommended that the state designate Wyoming’s Upper Green River Basin as an ozone nonattainment area.42 The Wyoming Department of Environmental Quality conducted an extended assessment of the ozone pollution problem and found that it was “primarily due to local emissions from oil and gas . . . development activities: drilling, production, storage, transport, and treating.”43 Last winter alone, the residents of Sublette County suffered thirteen days with ozone concentrations considered “unhealthy” under EPA’s current air‐quality index, including days when the ozone pollution levels exceeded the worst days of smog pollution in Los Angeles.44 Residents have faced repeated warnings regarding elevated ozone levels and the resulting risks of going outside.45 Ozone problems are mounting in other Rocky Mountain states as well. Northeastern Utah recorded unprecedented ozone levels in the Uintah Basin in 2010 and 2011. In the first three months of 2010—which was the first time that winter ozone was monitored in the region—air quality monitors measured more than 68 exceedances of the federal health standard. On three of these days, the levels were almost twice the federal standard.46 Between January and March 2011, there were 24 days where the National Ambient Air Quality Standard (NAAQS) for ozone were exceeded in the area. Again, ozone pollution levels climbed to nearly twice the federal standard.47 The Bureau of Land Management (BLM) has identified the multitude of oil and gas wells in the region as the primary cause of the ozone pollution.48 Rampant oil and gas development in Colorado and New Mexico is also leading to high levels of VOCs and NOx. In 2008, the Colorado Department of Public Health and Environment concluded that the smog‐forming emissions from oil and gas operations exceed vehicle emissions for the entire state.49 Moreover, significant additional drilling has occurred since 2008. Colorado is now home to more than 46,000 wells.50 There is also significant development in the San Juan Basin in southeastern Colorado and northwestern New Mexico, with approximately 35,000 wells in the Basin. As a result of this development and several coal‐fired power plants in the vicinity, the Basin suffers from serious ozone pollution.51 This pollution is taking a toll on residents of San Juan County. The New Mexico Department of Public Health has documented increased emergency room visits associated with high ozone levels in the County.52 VOC and NOx emissions from oil and gas development are also harming air quality in national parks and wilderness areas. Researchers have determined that numerous “Class I areas” – a designation reserved for national parks, wilderness areas, and other such lands53 – are likely to be impacted by increased ozone pollution as a result of oil and gas development in the Rocky Mountain region, including Mesa Verde National Park and Weminuche Wilderness Area in Colorado and San Pedro Parks Wilderness Area, Bandelier Wilderness Area, Pecos Wilderness Area, and Wheeler Peak Wilderness Area in New Mexico.54 These areas are all near concentrated oil and gas development in the San Juan Basin.5 As oil and gas development moves into new areas, particularly as a result of the boom in development of shale resources, ozone problems are likely to follow. For example, regional air quality models predict that gas development in the Haynesville shale will increase ozone pollution in northeast Texas and northwest Louisiana and may lead to violations of ozone NAAQS.56 Experts also anticipate air quality problems associated with development of the Marcellus shale in the Mid‐Atlantic region.57 In particular, the state of Delaware has conducted an extensive analysis of NOx pollution from the oil and gas sector, in part because Delaware is downwind from the Marcellus gas plays which projects like FLEX’s proposal would support.58 It demonstrates that Delaware and other downwind states will experience significant NOx pollution if production increases without appropriate controls.

#### T/natural gas production leaks methane---turns warming

Bloomberg 12 The Gas Is Always Greener When It Leaks Less Jun 13www.bloomberg.com/news/2012-06-13/the-gas-is-always-greener-when-it-leaks-less.html

The great promise of natural gas, we’re often told, is that it will be better for the climate than other fossil fuels. In fact, this can come true only if very little of the fuel is allowed to escape, unburned, into the air.

The trouble is, we don’t know how much natural gas leaks -- as it is extracted, processed, transported and used -- and some evidence suggests the amount may be more than we have assumed. As the U.S. gears up to use more of the fuel, not only for electricity and home heating but also to power cars and trucks and for export, the need to find out how much is getting away is urgent.

This is exactly what experts convened by the Department of Energy recommended last August. So far, their call has gone unanswered.

The reason natural gas has a reputation for being gentle on the climate is that burning it emits almost a third less carbon dioxide than burning oil does, and almost 45 percent less than burning coal does.

But when methane, the principal component of natural gas, floats directly into the air, it has a much stronger greenhouse effect than carbon dioxide has -- 25 times stronger over the course of a century and, over 20 years, 72 times stronger. (The time span makes a difference because methane breaks down in the atmosphere faster than carbon dioxide does.)

The maximum leakage we can afford is 3.2 percent of the total amount of natural gas used, scientists from the Environmental Defense Fund and three universities recently figured out. Any more than that, and using natural gas leads to more heat being trapped in the atmosphere for some time than using coal does.

The best guess so far on how much is leaking is just 2.4 percent. However, this number, from the U.S. Environmental Protection Agency, is based not on direct measurements but on limited data collected 20 years ago.

Recent measurements taken near a natural-gas field north of Denver indicate that the actual amount of methane escaping there is higher -- about 4 percent.

### Ext Warming defense/transition

#### Their internal link can’t possibly affect emissions enough to solve warming

Patrick J. Michaels 7, former program chair for the Committee on Applied Climatology of the American Meteorological Society, was a research professor of Environmental Sciences at University of Virginia for thirty years, was a contributing author and is a reviewer of the United Nations Intergovernmental Panel on Climate Change, February 2, 2007, “Live with Climate Change,” online: <http://www.cato.org/publications/commentary/live-climate-change>

However, actually "doing something" about warming is a daunting endeavor. The journal Geophysical Research Letters estimated in 1997 that if every nation on Earth lived up to the United Nations' Kyoto Protocol on global warming, it would prevent no more than 0.126 degrees F of warming every 50 years. Global temperature varies by more than that from year to year, so that's not even enough to measure. Climatically, Kyoto would do nothing.

In the past four years, the Senate has voted twice against "cap-and-trade" legislation — sponsored by New Mexico senators Jeff Bingaman, a Democrat, and Pete Domenici, a Republican — that would set quotas on carbon emissions and let companies buy and sell them. If adopted, their cap-and-trade law would reduce emissions by less than the Kyoto Protocol specifies. In other words, the Senate has been loath to even adopt something that does less than nothing.

The stark reality is that if we really want to alter the warming trajectory of the planet significantly, we have to cut emissions by an extremely large amount, and — a truth that everyone must know — we simply do not have the technology to do so. We would fritter away billions in precious investment capital in a futile attempt to curtail warming.

#### China alt cause

Yvonne Chan 9 in Hong Kong, BusinessGreen, 9/17/09, China's rapid growth imperils global climate change goal, says study, http://www.businessgreen.com/business-green/news/2249644/china-rapid-growth-imperils

China's booming economic growth imperils a global target to limit global warming to two degrees, according to a major new report from an influential government think-tank.

Released yesterday by the Energy Research Institute, China's Low Carbon Development Pathways by 2050 says that even if the nation were to embark on an aggressive strategy to cut greenhouse gas emissions, halting CO2 growth would be difficult given the country's current stage of rapid economic development.

"There is a huge number of cities to be built," study co-author He Jiankun told reporters. "They will consume a large amount of steel and cement. This means that **emissions will not be reduced for some time."**

The problem with the global target, according to the report, was that the two-degree limit – which was formally adopted by G8 nations in July – does not make adequate concessions for the industrialisation of developing countries.

The report said that in order to even get close to the target, it was up to wealthy nations to make carbon emission cuts of at least 90 per cent on 1990 levels by 2050. Otherwise, global temperatures will rise between 2.8 and 3.2 degrees above the pre-industrial average, estimated the report, which was conducted over a two-year period and had involved 10 independent institutes, including WWF and the US-based Energy Foundation.

### Positive feedbacks

#### Positive feedbacks aren’t physically possible---best data overwhelmingly goes our way

William M. Gray 12, Professor Emeritus, Department of Atmospheric Science, Colorado State University, May 23, 2012, “The Physical Flaws of the Global Warming Theory and Deep Ocean Circulation Changes as the Primary Climate Driver,” online: http://typhoon.atmos.colostate.edu/Includes/Documents/Publications/gray2012.pdf

AGW theory fails because the basic physics behind it is flawed. Its primary scientific justification has come from global climate model simulations which have serious embedded physical assumption errors. These model assumption errors cause their 75-100 year climate forecast simulations to give unrealistically too high global warming results by a factor as much as 10. These GCMs indicate that when CO2 doubles near the end of this century that the global average surface temperature should increase by about 3°C. All of the 19 global numerical models calculations that were discussed in the latest IPCC-AR4 (2007) report show about the same 3°C global warming for a doubling of CO2 (Figures 16 and 17). If this magnitude of warming were realistic it would bring about a major disruption in our global climate system and severely impact all life on earth. But it is not physically possible for this magnitude of 3°C global warming to occur as a consequence of the doubling of CO2 and a resulting blockage of but 3.7 Wm -2 . All the global circulation models have the same major physical flaw which is known as the ‘positive water-vapor feedback loop’. The argument goes like this:

Models assume that as CO2 increases to doubling that this causes the atmosphere to warm 1°C in order to send more IR energy to space in order to come into a radiative equilibrium. However, as discussed in section 3, the real warming for a doubling of CO2 should be only half this amount (~ 0.5°C). These GCM models then incorrectly assume that as the atmospheric temperatures increase approaches 1°C, that the relative humidity (RH) of the atmosphere remains constant. Any warming with constant RH causes the water vapor content of the atmosphere to rise. This extra assumed water vapor increase resulting from this warming then is assumed (incorrectly) to cause a large additional blockage of IR energy to space. This additional IR blockage due to the extra moisture increase is 2-3 times as large as the original IR blockage from the original CO2 doubling. This is known as the positive water-vapor feedback loop or the needed additional moisture-temperature rise that must occur to keep RH constant while achieving a new radiational equilibrium after CO2 doubles. This extra water vapor gain is needed to maintain constant RH while CO2 doubles. This makes it necessary that IR energy flux to space be further decreased by about twice (~ 7.4 Wm -2 ) the amount of the original IR blockage from CO2 doubling alone. To accomplish all these changes and maintain their numerical climate model in radiation equilibrium they must increase their global temperatures by an additional 2°C beyond the original 1°C warming needed to balance 3.7 Wm -2.

This strong additional water vapor gain and resulting 2°C temperature increase to obtain radiation equilibrium are not realistic. In fact, our project’s observational analysis (Gray and Schwartz, 2010 and 2011) show that in the critical upper tropospheric RH does not go up as temperature rises and rainfall increases. By contrast, we find that upper level water vapor slightly decreases (Table 1) with additional rainfall and temperature rise. This is a result of the mass balancing upper-level subsidence drying from the return flow of the deep penetrating cumulonimbus (Cb) convective updrafts (Figure 8).

This strong positive water vapor feedback loop which the GCMs rely so heavily on for the largest part of their global warming simulations is not strongly positive as they have assumed all these years, but slightly negative. There cannot be an extra global warming which is twice as large as the original amount of warming coming from the doubling of CO2 by itself (if 1°C) or four times as large a warming if the modelers had used the correct 0.5°C warming – as discussed above. This is the huge conceptual error of the GCM numerical simulations and the primary reason why they have so grossly exaggerated the global warming that would result from a doubling of CO2. A number of us have for years been pointing out this massive conceptual error in the GCM simulations. But the modelers take no notice and proceed on with their erroneous GCM simulations and dire future warming predictions.

#### They have to win positive feedbacks to win an impact---CO2’s not enough on its own---and most recent data suggests no feedbacks

Fritz Vahrenholt 12, Honorary Professor of chemistry at the University of Hamburg, former Umweltsenator in the German Ministry for Environment, Scientific Reviewer for the 2010 IPCC, February 8, 2012, interviewed by Welt Online, a German newspaper, online: http://thegwpf.org/international-news/4932-the-cold-sun-why-the-climate-catastrophe-wont-happen.html

Welt Online: What are the core substantive findings that have prompted your changing of position?

Vahrenholt: I was previously unaware of the fact that CO2 is a greenhouse gas with a relatively modest impact. Only by means of positive feedback effects do people arrive at a catastrophic scenario. The influence of the sun on our climate has been generally underestimated until now. At this point, you simply have to start thinking anew. My book is indeed an anti-IPCC-book, but I do not put myself against scientists who, overall, do worthy and important research. But it is not the scientists who claim ‘if you do not do this and that by the year 2020, the world will plunge into chaos.’

Welt Online: So you do not deny that CO2 contributes to global warming?

Vahrenholt: It has undoubtedly made a contribution, but to a very much lower degree than previously thought. The IPCC says that 95 percent of the current warming comes from CO2 and other greenhouse gases. By comparison with the evolution of the climate of the past 2000 years, we come to the conclusion that the sun has a much stronger influence. In the 20th century, not only has the concentration of CO2 in the atmosphere increased, but also the radiation and the magnetic field of the sun.

I cannot say exactly whether the contribution of CO2 to global warming makes up 40, 50 or 60 percent. However, both factors play a role, and the influence of the sun is probably even a little stronger than that of CO2.

Welt Online: How do arrive at this estimate?

Vahrenholt: We have experienced a warming of 0.8 degrees Celsius since the end of the Little Ice Age. This is primarily due to the large millennial climate cycle in which the Earth warms in each of the first 200 years of the cycle. Between 1970 and 2000 there is a sharp increase in the average temperature, but the same rate of increase was also observed between 1910 and 1940 and between 1860 and 1880.

This is nothing extraodinary. If you look closely, you can see that this change is connected with a 60-year cycle of global ocean currents. The Pacific Decadal Oscillation (PDO) has an influence on the temperature of the earth. In 1977, the PDO entered in a positive phase. It was at the maximum at the turn of the millennium, and is now in a downturn. The Atlantic Decadal Oscillation is also in decline, a little bit delayed.

A part of the warming is thus due to natural effects. The decisive shortcoming of the IPCC is that the warming from 1977 to 2000 was seen as due to CO2 and simply extrapolated to 2100 in the climate models. Another problem is that the importance of soot was underestimated. Soot has about 55 percent of the climate effects of CO2 predicted by the IPC. Also, at this point, CO2 must therefore give up some of its former role as the key driver of global warming.

We note that global temperatures have plateaued for the last twelve years. The explanations of the climatologists are not enough to explain why there is a pause. The Pacific and Atlantic Oscillations are still not taken into account in their models.