## Case 1NC

**Solvency**

***The plan can’t increase coal production in the US – 4 reasons***

Kevin **Kennedy**, Director of the U.S. Climate Initiative at the World Resources Institute, “Markets Favor Alternatives to Coal”, April 11th 20**12**, http://energy.nationaljournal.com/2012/04/whats-really-causing-coals-dec.php

**The U.S. electric power system is gradually shifting toward cleaner forms of generation**. **One sign of this transition is the declining use of coal** for electric power production. In 2011, coal dropped to its lowest level of power generation in more than a decade, according to the U.S. government’s independent Energy Information Administration (EIA). In fact, the EIA recently reported that coal’s share of U.S. electric power generation fell below 40% for the last two months of 2011, the lowest level since 1978. **To understand the cause of this decline, it is important to examine the underlying market forces**. **Doing so provides important context for recent coal plant retirement announcements, particularly given that some companies have attributed retirements to EPA rules that are still years away from going into force**. For example, **FirstEnergy Corp. announced** in late January 2012 that **it would retire several of its smaller coal fired power plants, explaining that the decision was “based on the U.S. Environmental Protection Agency Mercury and Air Toxics Standards** (MATS), which were recently finalized, and other environmental regulations.” **FirstEnergy, however, had previously cited a range of reasons for its decision to reduce operations at many of its smaller coal plants. Furthermore, available evidence does not support the notion that new EPA regulations are the primary driver behind recent coal plant retirements**. **These business decisions are heavily influenced by market forces,** such as falling natural gas prices, declining demand for electricity, rising prices for coal and the expanding market for renewables. **A Closer Look at Key Drivers Following are some of the key drivers influencing the direction of the U.S. power sector: 1. Natural gas prices are low**. **Monthly average prices for natural gas delivered to electric generators are approaching a 10-year low**, which is largely attributable to the rapidly expanding supply of shale gas. **As a result, wholesale prices for on-peak electricity are down in most parts of the United States**. **2. Coal prices have increased significantly**. **U.S. average annual coal prices have increased by more than 70% in the past decade** (inflation adjusted), **driven** in part **by growing exports**. Between 2005 and 2011, **U.S. coal exports grew at an average annual rate of 14%.** In addition to growing demand for coal in Asia, rising U.S. coal prices have also been attributed to declining productivity at U.S. coal mines, which dropped by more than 20%, on average, between 2000 and 2010. **3. Growth in electricity demand has slowed**. In the past couple of years, **growth in U.S. electricity consumption has declined in part because of the economic recession**, **but also as a result of technology advancements,** along with programs **designed to promote energy efficiency and demand side management**. In fact, EIA data (AEO 2011, figure 76) show that U.S. electricity demand growth has gradually slowed over several decades. **4. Renewables are becoming more affordable and their market share is on the rise.** In some regions, renewables are already becoming cost competitive. For example, the Public Service Commission of Michigan, which is responsible for approving new electric power contracts, recently found that new contracts for electricity from new wind farms were up to 40% cheaper than the cost of building new coal-fired power in that state. **The trend of increasingly affordable renewable electricity is forecast to continue**. **According to the EIA, new wind power is expected to be more affordable than new coal-fired power in many regions by 2016.** **These trends are driving significant shifts in U.S. energy markets that fundamentally challenge prior assumptions regarding the direction of U.S. energy investments. Natural gas is cheaper, coal is more expensive, electricity demand growth is down, and renewables are already more cost-effective than new coal plants in some markets.** New EPA rules will provide significant benefits to consumers, as well as protect public health and the environment by augmenting shifts toward cleaner and more efficient energy sources. **With compliance deadlines still three or more years away – as is the case of the Mercury Air Toxics Standard** (MATS) – **and other market forces already contributing to declining U.S. coal use, available evidence does not support claims that new regulations are to blame for the retirement of America’s aging coal fleet.**

***Market factors key***

**Walsh 12** Bryan Walsh, senior writer for TIME magazine, covering energy and the environment—and also, occasionally, scary diseases. Previously I was the Tokyo bureau chief for TIME, and reported from Hong Kong on health, the environment and the arts. Nov. 21, 2012, Time Magazine, The War on Coal Is Being Won in the U.S., but the Real Battle Is Overseas, <http://science.time.com/2012/11/21/the-war-on-coal-is-being-won-in-the-u-s-but-the-real-battle-is-overseas/>, jj

**There’s a war on coal in America** — or at least that’s what players in the coal industry say. They’re not entirely wrong. **Coal prices in the U.S. are falling and coal plants are being retired. Most of that change is being driven by what analysts refer to as “market conditions” — otherwise known as shale gas and fracking, which has driven prices for natural gas down, down, down**. That’s encouraged utilities to phase out coal in favor of cleaner natural gas — a transition that has been accelerated by federal environmental regulations that will increasingly limit the sort of air pollution associated with old coal plants.

***Independent studies conclude compliance costs are even less than EPA predicted***

Alex **Chamberlain 11**, ERA Environmental Consulting, 2011, “EPA Utility MACT Regulations Face Similar Criticism as Boiler MACTs,” online: <http://info.era-environmental.com/blog/bid/40758/EPA-Utility-MACT-Regulations-Face-Similar-Criticism-as-Boiler-MACTs>

**Industry groups are critical of the new Utility MACTs. Some** have even **projected** that **the costs to industry will actually amount to $110 billion** - **ten times the estimated price tag cited by EPA**. **Independent studies, however**, **have shown that the new EPA regulations** for the energy sector **will** **actually have less of an economic impact** **than the EPA itself had predicted**. They also fear that the court-imposed short deadline imposed on EPA’s final publication will result in a repeat of the Boiler MACT situation. In March 21, 2011, EPA published its final Boiler MACT regulations in the federal register, only to immediately announce it was officially reconsidering many aspects of the final rule and indefinitely delaying the regulation enforcement date. The resulting uncertainty has created unrest and confusion across the manufacturing industry and the political sphere which the energy sector would rather avoid.

***EPA mercury and carbon regs are net-positive for jobs---no adverse net impact on the industry***

Daniel J. **Weiss 12**, Senior Fellow and Director of Climate Strategy at the Center for American Progress, May 25, 2012, “The ‘War On Coal’ Is A Myth,” online: <http://thinkprogress.org/climate/2012/05/25/490444/war-on-coal-myth/>

The Environmental Protection Agency (**EPA) has promulgated** or proposed **new clean air standards for smog, acid rain, mercury**, air toxics, **and carbon** pollution **that will** save lives, **create jobs** and protect public health. For example, **the Mercury and Air Toxics Standard** alone **could prevent** up to **11,000 premature deaths**, 130,000 asthma incidents, and 540,000 lost work days every year. **This would provide** at least **$59 billion in economic benefits**.

**The Economic Policy Institute projects** that **the mercury standard will** actually **have a “positive net impact on overall employment** – likely **leading to the** **net creation of 84,500 jobs** **between now and 2015.”** The jobs created by the standard, however, would not just be limited to certain industrial sectors. EPI’s study projects that “**8,000 Jobs would be gained in the utility industry itself**,” **along with** the over **80,500 jobs** that would be **created to build pollution control equipment**. **While** dirty **coal companies claim** that **the mercury standard will cause massive unemployment, EPI notes** that **“only 10,600 jobs would be displaced due to higher energy costs**.” Richard **Morgenstern, a former Reagan** and Clinton **EPA official, predicts** that **the new standard will have “no net impact” on employment**.

**EPA predicts** that **its proposed carbon pollution standard** for new power plants **will have no impact on employment or existing coal plants**. In fact, **the standard simply complements existing market factors**, as the EPA points out:

**Because this standard is in line with current industry investment patterns**, **this proposed standard is not expected to have notable costs** **and is not projected to impact electricity prices or reliability**.

**Exports**

***Chinese environmental movements can’t topple the regime***

**Nan & Chun, 1/8/13** (Xu, is deputy editor in chinadialogue‘s Beijing office, & Zhang,, Assistant Editor in chinadialogue’s Beijing office “Protests alone will not help China protect its environment” http://www.chinadialogue.net/article/show/single/en/5555-Protests-alone-will-not-help-China-protect-its-environment)

In the past decade, **China has transformed dramatically**. **One of the biggest changes is citizens’ awareness of environmental issues**, and as a result, environmental protests are on the rise. But **the surge in the number of environmental protests must be viewed cautiously**, says Renmin University Environmental Department Director Ma Zhong – naïve **support will not help the environmental movement.**

***CCP strong now***

**Bloomberg ‘2-4-13**

(Chinaâ€™s services sector grows faster in January, sustains recoveryBloomberg Feb 4, 2013, 04.21AM IST

<http://articles.economictimes.indiatimes.com/2013-02-04/news/36743086_1_china-s-pc-china-federation-chief-asia-economist>)

**China's** services **industries grew at the fastest pace since August** **as gains in retailing and construction aid government efforts to drive a recovery** in the world's second-biggest economy.

The non-manufacturing Purchasing Managers' Index rose to 56.2 in January from 56.1 in December, the Beijing-based National Bureau of Statistics and [China](http://economictimes.indiatimes.com/topic/China) Federation of Logistics & Purchasing said in a statement on Sunday.

A reading above 50 indicates expansion. **The Shanghai Composite Index** last week **posted the biggest weekly gain since October 2011 on optimism that** [**Communist Party**](http://economictimes.indiatimes.com/topic/Communist%20Party) **leader** [**Xi Jinping**](http://economictimes.indiatimes.com/topic/Xi%20Jinping) **can sustain the nation's expansion and control the risk that** [**inflation**](http://economictimes.indiatimes.com/topic/inflation) **will surge in the second half.**

***Coal exports good --- Chinese imports key to prevent water scarcity***

Kevin Jianjun **Tu** is a senior associate in the Carnegie Energy and Climate Program, where he leads Carnegie’s work on China’s energy and climate policies, “Understanding China's Rising Coal Imports”, Feb 20**12**, http://carnegieendowment.org/2012/02/16/understanding-china-s-rising-coal-imports#

**The environment could also play a part in China’s coal-importing decisions**. Importing coal from overseas markets might enable the Chinese central government to close down many small and inefficient mines and prevent similar mines from being opened up, thereby protecting local environments. Still, no matter where coal is mined, the process often has detrimental environmental effects on the host country. Evaluating this local impact against global environmental challenges and preventing a mere shifting of local environmental burdens from China to other coal-producing countries requires closer collaboration between China and its major coal trading partners. Local environmental impacts There is a vast amount of literature on local environmental degradation associated with coal mining activities. Local ecosystems and the health of residents adjacent to coal mines are particularly at risk. Acidic mine drainage and toxic coal sludge can contaminate local streams and groundwater. Mountaintop removal causes forest destruction, loss of wildlife habitats, and subsequent erosion, while underground mining can lead to land subsidence. Local air pollutants—nitrogen oxide and sulfur dioxide, and toxic heavy metals, such as lead, mercury, and arsenic—cause damage to human health. And coal dust, which is stirred up through coal mining, preparation, transport, storage, and end use, can cause severe respiratory problems. Moreover, **both coal mining and processing are water intensive. Because many of China’s coal resources are located in arid regions, Chinese coal mining operations often compete with residents and agriculture for access to scarce water resources.** **As mining activities often draw heavily from groundwater sources, they have depleted groundwater levels in many coal districts.** **This has detrimental effects on local flora and fauna, especially during increasingly more frequent periods of drought.** To the extent that coal imports relieve the push to keep small and inefficient mines operating or to site new large-scale mines, they could suppress widespread mining activities and the associated environmental damage to China’s coal-rich regions, such as Shanxi, Shaanxi, and Inner Mongolia. **From a Chinese perspective, coal imports could serve local environmental goals, especially regarding small coal mines that have been difficult for the central government to regulate in an environmentally responsible fashion.**

***That collapses the CCP --- much bigger internal link than the plan***

Nathan **Nankivell**, Senior Researcher at the Office of the Special Advisor Policy at Maritime Forces Pacific Headquarters, “The National Security Implications of China’s Emerging Water Crisis”, China Brief Volume: 5 Issue: 17. August 2, 20**05**, http://www.jamestown.org/single/?no\_cache=1&tx\_ttnews%5Btt\_news%5D=30735

As **water shortages** impact and restrict continued economic growth and the quality of life of Chinese citizens, they **may mutate into a potential catalyst for domestic dissent**. Throughout 2005, increasing reports of public protests, riots, and demonstrations against the CCP circulated through the national and international press. But unlike issues of employment, local cadre corruption, and land use, which have sparked much of this year’s unrest, **water shortages** and other environmental issues **present far more pressing concerns** for the Party. Environmental grievances and especially water shortage concerns already receive regular media attention from the state media organs like Xinhau, China Daily and the People’s Daily. This fact has ensured that water issues are already known and have been the subject of debate and low-level criticism for many years. As shortages become more prevalent and far reaching, **they present a unifying focal point for dissent** that crosses geographic, cultural, socio-economic, and political lines. As decisions are made from the center over the future of water resources, there will no doubt be winners and losers. The problem for the Party will be how to prevent and control the ensuing unrest that will result as some citizens’ water needs are sacrificed for the good of the nation. Will rural peasants outside Beijing who have for years suffered disproportionately from unfair agricultural taxing, corruption, and poor social services willingly give up their access to clean potable water to ensure that urbanites and Olympic spectators have water? Or will they instead fight tooth and nail like unemployed factory workers in other northern cities to keep and defend their economic livelihood. Already the answer appears to be emerging as several disputes over water issues in 2004 resulted in violent protests that left several injured and hospitalized. [7] A Potential Threat to Party Control **Water issues** in China **are** evolving into **a political challenge for the CCP**. Whether the Party will direct greater funding and resources towards solving the nation’s water crisis, and more importantly whether any investments can truly reverse the damage already done will be key factors to watch. Equally important is how Beijing will address and react to the political environment created by the problem. Without question the Party’s options will be limited. Planners will be hard-pressed to justify picking winners and losers as they allocate resources that will no doubt alienate elements within the Party and throughout Chinese society. Whether these decisions create factions within the CCP or evolve into a key platform for independent political candidates as land issues did in municipal elections in Shanghai is a very real possibility. In a worst-case scenario water **shortages could be the catalyst for** united **demonstrations** throughout the country **that reveal the Party’s soft underbelly**. Any move by the Party to quell or put down dissent will result in huge amounts of domestic pressure potentially equal to levels seen during Tiananmen, but without the convenient central location that allowed the Party to crush pro-democracy forces and justify it to the rest of the nation. Internationally, crackdowns will also force key trading nations like Japan, the US, Australia, and South Korea to reduce trade and investment and revaluate relations if significant domestic pressure is brought to bear. Moreover, such pressure in European Union nations could forestall Chinese efforts to have the arms embargo removed, a key to furthering international legitimacy. Thus as many China watchers continue to monitor the traditional security threats to the nation they may be wise to look at the impact that water issues foreshadow for the Communist Party. Whether the issue is strong enough to truly impact the Party’s control remains uncertain, but it may be as threatening to domestic stability as any traditional security threat. Moreover, if other nations are able or willing to exploit the issue, **the** Communist **Party could witness its first true political challenge in more than 15 years.**

***Turn – exports decrease GHG emissions – It displaces domestic production in other nations and results in less US consumption***

Michael **Levi,** David M. Rubenstein Senior Fellow for Energy and the Environment, April 10th 20**12**, http://blogs.cfr.org/levi/2012/04/10/will-coal-exports-undermine-efforts-to-curb-climate-change/

U.S. coal production is down but **exports** are up. That’s **led to widespread warnings that efforts to curb U.S. coal consumption won’t do much if anything to slow climate change** unless the United States bans exports too. **That conclusion strikes me as premature**. Brad Plumer, writing yesterday at the Washington Post, presents the argument for worrying about exports clearly: “In 2011, the United States exported even more coal to countries like Brazil, South Korea and Europe, just as its own consumption was falling. That’s evidence in favor of the idea that if the United States won’t burn its vast coal reserves, then other countries will be happy to take the coal off our hands. And if that’s true, it would mean that the government’s recent spate of power-plant regulations aren’t helping the country make much progress on climate change. After all, carbon-dioxide that’s released by burning coal will heat up the planet no matter where it’s burned.” But **that’s only half of the equation.** **Increased U.S. coal exports will raise global greenhouse gas emissions if and only if they supplement other coal production rather than displace it. On that count, we’re actually flying pretty blind**. **There’s reason, though, to suspect that a good part of increased U.S. coal exports would come at the expense of others’ output, which means that it wouldn’t increase net global greenhouse gas emissions.** Last year, **the IEA tried to model how country-by-country coal output would be affected if the world slashed its coal consumption. It found that Chinese**, Australian, and Indonesian p**roduction would be cut deeply, but that U.S. production would hold up far more strongly. This suggests, at a minimum, that substantial U.S. coal exports are compatible with a lower-carbon world.**

***China consumption better – they have better tech***

**Bloomberg,** March 27th 20**12**, http://www.bloomberg.com/news/2012-03-27/china-shows-u-s-how-to-push-for-carbon-capture.html

**It’s a tantalizing promise that one day “carbon capture” will remove greenhouse gases from the smoke made by coal**-fired power plants. After all, **these plants**, which provide 45 percent of electricity **in the U.S., account for more than a third of the country’s carbon dioxide emissions**. Small-scale experiments have been successful enough that, at this point, **engineers have little doubt the technology can work. Yet efforts in the U.S. to advance it are stalled**. **What was to have been the nation’s first commercial-scale project** -- at Mountaineer, a coal-burning electricity plant in New Haven, West Virginia -- **has been put on hold.** **Meanwhile, in China, carbon capture marches steadfastly ahead**, as an article in the May issue of Bloomberg Markets magazine reports. **A pilot project** by China Huaneng Group Corp. **has been able to remove carbon from coal-plant exhaust for about $39 per ton of captured CO2, which is a little more than a third of what it costs in the U.S.** The work has been so impressive, as John Lippert and Chua Baizhen report, that **Duke Energy Corp., the largest U.S. energy company, has signed a research agreement** with Huaneng **to study its technology**. Duke wants to learn how much it would cost to retrofit its largest power plant, in Gibson County, Indiana, to capture carbon. **The Chinese plant filters the smoke through an aqueous amine solution rather than through chilled ammonia, as is commonly done in U.S. carbon-capture experiments**. Duke would like to find out how much of Huaneng’s cost savings flow from its proprietary technology, and how much is attributable to lower labor and capital costs. **How can it be that China has taken the leadership role on clean coal? The answer has to do partly with China’s greater need, given its overwhelming reliance on coal for power. Unlike the U.S., China lacks huge stores of natural gas to tap as an alternative. It also has to do with China’s controlled economy, which makes it possible for its power plants to take on greater costs and risks than American electricity providers can**. **The Chinese government plans to finance a demonstration project that, by 2015, captures a million tons of carbon per year. And energy companies are competing with one another for the prize.**

***No solvency and Turn – Lack of imports forces China to rely on domestic coal – this increases traffic bottlenecks***

Kevin Jianjun **Tu** is a senior associate in the Carnegie Energy and Climate Program, where he leads Carnegie’s work on China’s energy and climate policies, “Understanding China's Rising Coal Imports”, Feb 20**12**, http://carnegieendowment.org/2012/02/16/understanding-china-s-rising-coal-imports#

**Once a largely isolated coal market, China now plays an increasingly important role in shaping global trade flows and increasing price fluctuations in world coal markets**. Understanding the key forces driving Chinese coal imports is necessary for assessing the global implications of China’s international coal trade. **There are several factors that could be influencing China’s coal-importing decisions**. **Transportation Bottlenecks The majority of China’s coal resources are located in the western and northern inland provinces**. The two provinces of Shanxi and Shaanxi and the autonomous region of Inner Mongolia alone account for nearly 70 percent of China’s proven coal reserves and more than half of national coal output.**8 In contrast, many major coal-consuming centers are located along China’s heavily populated eastern and southern coastline**, where less than 5 percent of China’s proven coal reserves are located but nearly 40 percent of national coal consumption was reported in 2010.9 **This unbalanced coal resource distribution and consumption pattern means that coal must be transported long distances via railways, roads, or waterways** (both inland river and coastal marine transport) from the west to the east and from the north to the south. **Integrated railway and coastal marine shipping is the most important mode of coal transport in China. But China lacks dedicated southbound rail lines, which means that coal from the northern and western provinces destined for consumption in the south needs to be first moved eastward to seaports around the Bohai Bay in northeast China**. From there it is shipped to major coal ports of discharge along China’s southeastern coastline. Due to the particular nature of the Chinese economy—the gradual shift from a planned economy to an increasingly market-oriented one, and a decade-long tight supply and demand balance of coal in the domestic market—it can be assumed that **coal transportation infrastructure in China is usually operated at close to full capacity. This implies that the rapid growth of coal throughput in recent decades is primarily driven by the expansion of infrastructure capacity**, rather than by an improvement in the efficiency and utilization rates of railways or seaports. Since 1980, national coal production in China has grown at an annual rate of 5.7 percent, reaching 3,235 Mt in 2010. During the same period, the growth in the total amount of coal transported by rail corresponded to an annual increase of 4.6 percent. In contrast, after a stagnation in the 1980s and early 1990s, coal throughput (both incoming and outgoing) handled by major Chinese coastal ports increased from 91 Mt in 1995 to 1,163 Mt in 2010, the equivalent of an annual growth rate of 19 percent.10 In other words, **while the capacity expansion of seaports seems to have proceeded at a rate faster than national coal production, Chinese railways encountered great difficulty in keeping pace with the country’s burgeoning coal mining industry**. **Not surprisingly, measured as a percentage of national coal output, coal transported by rail has declined from 69 percent in 1980 to less than 50 percent in recent years**. In comparison, coal throughput handled by major coastal ports has increased from nil in 1980 to 36 percent of national coal output (figure 3). Thus, **compared to the bottlenecked railway infrastructure, the increasingly less capacity congested coastal ports in China have been able to handle not only higher percentages of national coal output but also a sizable amount of coal imports in recent years**. **One of the reasons for the sharp contrast in capacity expansion lies in the organizational structure of railways and ports.** **Since China’s Ministry of Railways is both the regulator and the monopoly operator of China’s national railway network, a lack of competition has led to insufficient investment in coal rail lines thus far. China’s coastal port sector on the other hand was opened up to competition in the 1990s, which resulted in increased investment in port facilities and led to a seaport building boom**. **The capacity expansion of major coal ports of discharge in the southeastern provinces allows consumers there to choose between domestic coal from northern ports and overseas coal from the international market. Coal imported from overseas suppliers can help Chinese buyers ensure a stable supply of coal especially during the peak demand season.** Chinese consumers along the southeastern coastline may therefore prefer coal imports for the purpose of supply stability. **From the perspective of the Chinese government, rising coal imports might be encouraged as a way to ease China’s deteriorating transportation bottlenecks.** Otherwise, costly investment would be required to build more dedicated coal rail lines and port facilities in northern China.

***Bottlenecks collapse the economy***

L. **Xu**, Senior Research Fellow/Senior Lecturer at RMIT University in Melbourne, Australia, “China's Economy in the Post-Wto Environment: Stock Markets, FDI and Challenges of Sustainability”, 20**11**, page 221

**Traffic congestion is a well-known problem in** many **Chinese cities and has caused significant economic loss**. For example, in Beijing, before the government imposed a traffic restriction measure, a driver usually took about an hour to travel 15 kilometers from his home to the central business district (CBD) during the commuting period; a typical work day congestion period could last about eight hours according to a recent news article in China Today (Liu, 2009). In Shanghai, **the economic loss caused by congestion was 10 percent of its GDP** in 2003 (Feng, 2006).

***Economic decline in China causes multiple scenarios for war***

**Friedberg 2011** (July/August, Aaron L., professor of politics and international affairs at the Woodrow Wilson School at Princeton University, Hegemony with Chinese Characteristics, The National Interest, lexis)

Such **fears of aggression are heightened by an awareness that anxiety over a lack of legitimacy at home can cause nondemocratic governments to try to deflect popular frustration and discontent toward external enemies**. Some Western observers worry, for example, that **if China’s economy falters its rulers will try to blame foreigners and even manufacture crises with Taiwan, Japan or the United States in order to rally their people and redirect the population’s anger. Whatever Beijing’s intent, such confrontations could easily spiral out of control.** Democratic leaders are hardly immune to the temptation of foreign adventures. However, because the stakes for them are so much lower (being voted out of office rather than being overthrown and imprisoned, or worse), they are less likely to take extreme risks to retain their hold on power.

**Manufacturing**

***Literally every economic indicator is positive – long term trends are outstanding***

**Minerd, 1/25/13** - Chief Investment Officer and a Managing Partner of Guggenheim Partners, LLC, a privately held global financial services firm with more than $160 billion in assets under supervision(Scott, Seeking Alpha (an investment site), “ The U.S. Economy Is Reaching Escape Velocity” <http://seekingalpha.com/article/1134471-the-u-s-economy-is-reaching-escape-velocity?source=google_news>

The U.S. economy is reaching "escape velocity," powered by the monetary rocket fuel from central banks around the world. **Almost every domestic economic indicator is now positive**, and the economic backdrop is stronger than it has been in the last seven years. We are in the **healthiest financial condition since 2003**. If the post-2003 experience were to be repeated, **we could see an uninterrupted economic expansion for four years**. Although pockets of uncertainty remain, such a favorable outlook for the economy and markets cannot to be ruled out.

Investors can expect a continuation of the themes that have dominated the environment since the recovery began: tighter credit spreads, low interest rates, improving employment, modest inflation, and sustained economic growth. Historically low interest rates and continued earnings growth will support higher equity valuations. As leveraged buyouts come back into play, undervalued companies with large cash balances are sure to be targets. More merger and acquisition activity would lift share prices higher, furthering the expansionary trend that is already underway.

***Status quo solves manufacturing, regardless of energy prices***

**McKendrick 12/5/**12 Joe McKendrick is an independent analyst who tracks the impact of information technology on management and markets. He is the author of the SOA Manifesto and has written for Forbes, ZDNet and Database Trends & Applications. He holds a degree from Temple University. He is based in Pennsylvania. 12/5/12, Smart Planet, 6 reasons manufacturing is returning to North America, <http://www.smartplanet.com/blog/bulletin/6-reasons-manufacturing-is-returning-to-north-america/7422>, jj

**Lower transportation costs, competitive wages, technology and employee productivity have made North America a manufacturing destination**. In a sign of this manufacturing renaissance, GE, one of the world’s largest appliance manufacturers, gearing up its almost-dormant Louisville facilities for new product development and production.

In a new report in The Atlantic, Charles **Fishman** describes how the “insourcing” boom is bringing back manufacturing to North American shores.

He **cites a number of reasons why manufacturing is suddenly so attractive again**:

**High transportation costs**: **“Oil prices are three times what they were in 2000, making cargo-ship fuel much more expensive now than it was then.”**

Lower domestic energy costs: “The natural-gas boom in the U.S. has dramatically lowered the cost for running something as energy-intensive as a factory here at home,” Fishman relates, adding that “natural gas now costs four times as much in Asia as it does in the U.S.”

**Offshore wages are rising: “In dollars, wages in China are some five times what they were in 2000—and they are expected to keep rising 18% a year.”**

**Labor relations are more cooperative**: “Appliance Park’s union was so fractious in the ’70s and ’80s that the place was known as ‘Strike City,’” says Fishman.

**Employee productivity is rising: “Labor costs have become a smaller and smaller proportion of the total cost of finished goods. You simply can’t save much money chasing wages anymore.”**

**Offshore factories can’t keep up with design and technology changes:** “As products change, as technologies evolve, as years pass, as you change factories to chase lower labor costs, the gap between the people imagining the products and the people making them becomes as wide as the Pacific. Factories take a while to settle into a new product, a new design. They face a learning curve. But **models that have a run of only a couple years become outdated just as the assembly line starts to hum. That makes using faraway factories challenging, even if they are cheap.”**

Fishman cites GE’s Appliance Park, a mega-site of buildings that was established outside of Louisville, Kentucky in the early 1950s, with employment at the site peaking at 23,000 in 1973. The move to offshore manufacturing eventually dwindled the Appliance Park workforce to 1,863 in 2011. Over the past year, however, two assembly lines have been launched at the facility — one for energy-efficient water heaters and the other for a high-tech refrigerator. Plans are to launch a third assembly line for stainless steel dishwashers in early 2013.

Jason Hiner of TechRepublic (a SmartPlanet sister site) describes the role of information technology in restarting the engines of Appliance Park.

**The ability to keep production close to engineering and design is an important aspect of innovation**, Fishman adds:

“Bringing jobs back to Appliance Park solves a problem. It is sparking a wave of fresh innovation in GE’s appliances—every major appliance line has been redesigned or will be in the next two years—and the experience of ‘big room’ redesign, involving a whole team, is itself inspiring further, faster advances. In fact, insourcing solves a whole bundle of problems—it simplifies transportation; it gives people confidence in the competitive security of their ideas; it lets companies manage costs with real transparency and close to home; **it means a company can be as nimble as it wants to be, because the Pacific Ocean isn’t standing in the way of getting the right product to the right customer.”**

**The gains to made from the increased innovation possible with in-sourcing back to North American shores more than offsets any gains made by using cheap labor**, Fishman points out.

**Another force that may bring manufacturing back to North American shores** — but not addressed by Fishman in this article — **is the rise of 3D printing (or “additive manufacturing” as it’s called in industrial circles). The ability to mass-produce highly customized products with low-priced 3D printers will dramatically lower production costs, and there is no reason why it needs to happen apart from the design source.**

***Manufacturing overwhelmingly high***

**Worstall ‘11**

Tim Worstall, Contributor, Forbes, 6-17-11, What Decline of American Manufacturing? <http://www.forbes.com/sites/timworstall/2011/06/17/what-decline-of-american-manufacturing/>, jj

**We’re consistently told that US** or American **manufacturing is in decline.** Further, that we really ought to do something about this. However, **what’s not commonly realised is that while US manufacturing employment is in decline, American manufacturing is not.** In fact, **the US is still by a long, long, way the largest manufacturer in the world.** As Mark Perry goes on to point out: “ **The U.S. ranked #1 in the world for manufacturing, and produced 14% more output than second-ranked China** ($2.04 trillion) **and twice as much output as third-ranked Japan** ($1.15 trillion). What’s most impressive is that **the U.S. produced almost as much manufacturing output as the manufacturing sectors of Germany** (#4), **Italy** (#5), **France** (#6), **Russia** (#7), **U.K**. (#8), **Brazil** (#9) **and Canada** (#10) **combined** ($2.44 trillion). **If American manufacturing isn’t in decline then what are we supposed to be doing about this thing that isn’t happening?**

***Energy costs don’t affect manufacturing costs***

**Alden ‘12**

Edward Alden, Bernard L. Schwartz Senior Fellow, 6-1-12, Council on Foreign Relations, Policy Initiative Spotlight: Does Fracking Increase U.S. Competitiveness? <http://blogs.cfr.org/renewing-america/2012/06/01/policy-initiative-spotlight-does-fracking-increase-u-s-competitiveness/>, jj

The size of this advantage—particularly for manufacturing—was the subject of a recent blog post by CFR’s Michael A. Levi**. Levi cited** **reports that** **indicated only one tenth of U.S. manufacturing industries had energy as more than 5 percent of the cost component**. **Petrochemical manufacturing is one industry that could experience high growth, because natural gas could be used as a feedstock for many products. But this industry is relatively small and employs around 24,000 in the United States, according to the Bureau of Labor Statistics.** It is a relatively high wage occupation, however, with an average annual pay of $103,000. Increased domestic production can also reduce the trade deficit by displacing imports. Over the past three years, the value of net natural gas imports fell from $10.3 billion to $7.2 billion, according to the EIA. Rising prices have caused the value of net oil imports to rise, even though the United States imports almost 12 percent fewer barrels of crude oil than it did in 2009, a $41 billion dollar savings at current prices. Greater domestic production could also spur job creation in supporting industries. Levi’s recent post pointed to an IHS-CERA report that argued that in 2010, shale gas supported a total of 71,000 ancillary jobs, and projected that would rise to 124,000 by 2020. **Simply put, the expansion of domestic oil and gas production is not—itself—likely to lead to a manufacturing boom in the United States. While firms will enjoy lower electricity and heating bills** **from lower natural gas prices, few industries will see a substantial decrease in production prices because energy is usually a small portion of total costs.** However, shifting from foreign to domestic fuel sources trims the trade deficit, and boosts related industries at home.

***De-coupling checks the impact***

**The Economist 08** (3-6, The decoupling debate <http://www.economist.com/node/10809267>, jj)

MANY nasty words begin with the letter D: death, disease, depression, debt (when you drown in it) and deflation. “Decoupling”, on the other hand, has a nicer ring to it, even if it is the source of a great deal of controversy. Economists continue to argue about whether or not emerging economies will follow America into recession. The most pessimistic claim that “it makes no sense to talk about decoupling in an era of globalisation”: economies have become more intertwined through trade and finance, which should make business cycles more synchronised, not less. The slide in emerging stockmarkets on Wall Street's coat-tails appears to endorse their view. Yet **recent data suggest decoupling is no myth. Indeed, it may yet save the world economy**. **Decoupling does not mean that an American recession will have no impact on developing countries**. That would be daft. Such countries have become more integrated into the world economy (their exports have increased from just over 25% of their GDP in 1990 to almost 50% today). **Sales to America will obviously weaken. The point is that their GDP-growth rates will slow by much less than in previous American downturns**. **Most enjoyed strong growth during the fourth quarter of last year, and some speeded up, even as America's economy ground to a virtual halt and its non-oil imports fell**. **One reason is that while exports to America have stumbled, those to other emerging economies have surged** (see chart 1). China's growth in exports to America slowed to only 5% (in dollar terms) in the year to January, but exports to Brazil, India and Russia were up by more than 60%, and those to oil exporters by 45%. Half of China's exports now go to other emerging economies. **Likewise, South Korea's exports to the United States tumbled by 20% in the year to February, but its total exports rose by 20%, thanks to trade with other developing nations**. A second supporting factor is that **in many emerging markets domestic consumption and investment quickened during 2007**. **Their consumer spending rose almost three times as fast as in the developed world. Investment seems to be holding up even better**: according to HSBC, real capital spending rose by a staggering 17% in emerging economies last year, compared with only 1.2% in rich economies. Sceptics argue that much of this investment, especially in China, is in the export sector and so will collapse as sales to America weaken. But less than 15% of China's investment is linked to exports. Over half is in infrastructure and property. It is not just China that is building power plants, roads and railways; a large chunk of the Gulf's petrodollars are also being spent on gleaming skyscrapers and new airports—not to mention ski-domes in the desert. Mexico, Brazil and Russia have also launched big infrastructure projects that will take years to complete. **The four biggest emerging economies**, which accounted for two-fifths of global GDP growth last year, **are the least dependent on the United States: exports to America account for just 8% of China's GDP, 4% of India's, 3% of Brazil's and 1% of Russia's.** Over 95% of China's growth of 11.2% in the year to the fourth quarter came from domestic demand. China's growth is widely expected to slow this year—it needs to, since even Wen Jiabao, the prime minister, warned this week of overheating—but to a still boisterous 9-10%.

***Turn --- regs cause shift to Natural Gas***

**Brown 2012** (Tristan, Seeking Alpha Analyst, “Don’t Expect the EPA to finish off Thermal Coal”. Seeking Alpha – Leading Energy Research Source. <http://seekingalpha.com/article/990181-don-t-expect-the-epa-to-finish-off-thermal-coal>) [nagel]

Carbon Pollution Standard for New Power Plants (CPS): **The CPS will restrict** the greenhouse gas **(GHG) emissions of new fossil fuel-fired electric utility generating units** with a capacity greater than 25 MW. Affected power plants will be required to limit the carbon intensity of electricity produced to [below 1000 lbs CO2/MWh](http://www.epa.gov/airquality/cps/pdfs/20120327factsheet.pdf). **Coal-fired units have a carbon intensity of** [**roughly 1700 lbs CO2/MWh**](http://www.csmonitor.com/USA/Politics/2012/0327/EPA-issues-new-rule-on-greenhouse-gas-emissions-Where-does-that-leave-coal) **while natural gas-fired units have an intensity of 800 lbs CO2/MWh, so this proposed regulation is widely viewed as an effort to force new power plants to employ natural gas rather than coal as feedstock.** It has easily been one of most contentious pieces of proposed EPA regulation in recent years, likely because it arose from the fallout of the failed American Clean Energy and Security Act - President Obama's signature cap-and-trade plan that died in the Senate after Scott Brown was elected to the Senate seat previously held by the late Ted Kennedy, depriving Democrats of their supermajority there.

***Natural gas is a key economic game-changer – It revitalizes every industry***

Steve **Stackhouse**, writer for Area Development, MA in Journalism, “New Natural Gas Technologies Firing Up Manufacturing”, Fall 20**12**, http://www.areadevelopment.com/EnergyEnvironment/Fall2012/natural-gas-technologies--fuel-economic-boom-2223461.shtml

**The economic boom fueled by new natural gas drilling technologies has been stunning** — **some parts of the country barely noticed the Great Recession** as they scrambled to find enough well-paid workers to extract shale gas from the ground. **But what if that boom was just the tip of the economic-development iceberg**? **What if the gas boom turned out to be a catalyst helping to spark a much-needed rejuvenation in North American manufacturing**? That’s a question many business leaders and academics have been asking lately, and **the answer is encouraging.** **One study has projected the addition of a million new jobs in the next dozen years thanks to the availability of more affordable energy**, the need for products involved in extracting gas, as well as new manufacturing operations involving various products and byproducts that come from the ground. **Other studies look forward to an even bigger impact on jobs, and suggest that manufacturing operations that previously fled to overseas locations may turn around and come home.** New Technologies **The boom stems from the increased use of hydraulic fracturing**, or “fracking,” **and horizontal drilling techniques to unlock formerly inaccessible underground oil and gas treasures**. The concept started to catch on in the late 1990s in the Barnett Shale area of Texas and quickly spread to reserves such as Eagle Ford, Marcellus, Utica, and Bakken. **These and other shale reserves are rich enough to make the United States one of the world’s top producers of shale gas and all of its various downstream products**. A variety of industries will feel the impact, says Kevin Smith, chief economist for the American Chemistry Council. **The chemical industry** he represents **is already seeing growth, and** he says to also **watch for an impact in such sectors as steel and other metals, plastics and rubber products, glass, paper, and cement — what** he says **could be “a whole manufacturing renaissance in this country.” Take, as just one example,** **the plans from Shell Chemical to build** an ethane “cracker” in the northeast United States. A “cracker” is what the industry calls **a plant that breaks down oil and gas into smaller molecules**, and an ethane cracker creates ethylene, which goes into plastic. **Shell favors a site in Pennsylvania, one of the hot spots for shale gas development**, **and Smith’s organization has projected that the project could create more than 17,000 permanent jobs**, including direct and indirect jobs as well as ripple-effect employment. **Multiply that by the many other kinds of operations fueled by the shale gas boom and you get** what a PricewaterhouseCoopers study also terms “**a renaissance in U.S. manufacturing**.” One of that study’s lead contributors was Bob McCutcheon, PwC’s U.S. industrial products leader and the managing partner in Pittsburgh — a place where both shale gas and the state of manufacturing are on a lot of people’s minds. “We’re in the Marcellus Shale country, and a lot of conversation a year ago was centered on the energy sector — jobs, drilling activity, farmers cashing checks,” he says. “We were talking to a lot of clients in the industrial products sector and started to have a lot of conversations about what this might mean longer-term for manufacturing. So we tried to take a data-driven approach to the question.” **What are the results of this data-driven research? “We believe that the affordable, abundant shale gas that’s available with technology in horizontal drilling and fracking is a game-changer for U.S. manufacturing,”** says McCutcheon. **A report from the American Chemistry Council has similar superlatives: “Natural gas from shale is possibly the most important energy development in 50 years. It has huge potential for the United States.”** Who’s Feeling the Benefits? **Among other things, the PwC study scoured the filings of public companies for evidence of growth or planned expansions resulting from the gas boom**. **Even relatively early in the game, these documents already include numerous mentions**. Some of them point to the cost savings brought about by the drop in natural gas prices. Indeed, **the downward effect on natural gas prices is a goldmine for manufacturing,** according to the PwC analysis. **By 2025, U.S. manufacturers could be saving more than $11 billion a year on natural gas expenses. But probably twice as many of the public company filings on the topic involve firms that expect to make more use of the various byproducts of shale gas production, or whose products are essential to the extraction of shale gas**. According to Smith, **there has been a significant increase in capital investments made by chemical-makers and other manufacturing industries** — **investments that could eventually add up to $75 billion**. Gulf Coast locations and Appalachian areas are already seeing the impact, he notes. **One American Chemistry Council study focused on the projected supply response among eight natural gas-intensive manufacturing industries, and forecast an increased output of about $120 billion, which in turn would support the creation of 1.2 million** direct, indirect, and induced **jobs** — **not to mention the 1.1 million jobs that would be created by construction**. **Even that could be just the beginning of the employment impact, though**. Smith points to a Boston Consulting Group study suggesting that **America could be in for a wave of “re-shoring,” essentially the opposite of offshoring**. **As the cost picture improves, returning manufacturers could generate two to three million jobs. Truth is, many industries benefit from both the lower energy and supply costs as well as the opportunity to expand production.** **Take the metals business. There are plenty of metal tubes and pipes and other components involved in gas drilling itself**, McCutcheon notes. Beyond that, “**steel work is one of the largest consumers of natural gas, so the cost savings could be a significant competitive advantage for manufacturers here**,” he observes**. In addition, newer steel production technologies could carry the benefits a step further, including processes that substitute natural gas for coke in the steelmaking recipe.** Developments Linked to the Boom The American Chemistry Council has compiled lists of developments linked to the natural gas boom. Smith says the original intent was to create a “one-pager” summary, but the list quickly grew into multiple pages (in fact, there’s a page with fairly small type devoted just to chemical manufacturing developments and another full page of plastics-related projects). Here are just a few more examples of developments that observers have linked to the natural gas boom: **Dow Chemical plans to use shale resources along the Gulf Coast to ramp up ethylene production. Earlier this year, the company announced development of a new ethylene production plant in Freeport, Texas, and it plans to restart a Louisiana ethylene cracker and seek additional feedstocks from the Eagle Ford and Marcellus reserves**. In announcing the Texas development, the company’s Chairman and CEO Andrew Liveris noted, “For the first time in over a decade, U.S. natural gas prices are affordable and relatively stable, attracting new industry investments and growth, and putting us on the threshold of an American manufacturing resurgence.” **Research by the American Chemistry Council includes a long list of iron and steel expansions** that can be tied to the natural gas boom in such places as Pennsylvania, Ohio, North Carolina, Minnesota, Texas, Alabama, and Arkansas. **Nucor Steel has plans for a $750 million direct-reduced iron facility in Louisiana**. Like most metals-related plants, it’ll need a strong supply of natural gas, and nearby shale resources are considered likely sources. **Last year, U.S. Steel opened an Ohio mill to make steel pipe for the drilling industry, and a French company named Vallourec & Mannesmann is doing the same. The Eagle Ford Shale in Texas is the catalyst behind a $1.7 billion Formosa Plastics chemical complex expansion nearby.** Cracking units would produce ethylene and propylene gases for use as raw materials at on-site plastics plants. **Old Ocean, Texas, is where Chevron Phillips plans two propylene facilities, part of the company’s U.S. Gulf Coast Petrochemicals Project**. Last year the company announced plans for Gulf Coast ethane cracker and ethylene derivatives facilities. **Aither Chemicals is exploring development of an ethane cracker in West Virginia. The company is exploring the market interest for chemical feedstocks** that its cracking process would produce by tapping into the Marcellus Shale. **Bridgestone, Michelin, and Continental have South Carolina tire manufacturing developments linked to the gas boom, according to the American Chemistry Council**. Where Are the Benefits Most Powerful? The natural gas boom is certainly reflected in Area Development’s 2012 Leading Locations analysis. Many of the U.S. locations revealed by data sources to be the most prosperous are feeling the impact of fracking — from North Dakota to Texas to parts of Louisiana. Indeed, the impact has been so powerful that many of these areas barely experienced the recession and, if anything, had a surplus of job openings. As David Jenkins, vice president at engineering consultant TRC Companies, points out, there’s so much demand for workers that some sites have had to build worker “camps.” **The question is how far does the halo expand beyond those areas where the gas is being extracted from the ground?** “It depends on the nature of the industry and how important it is to have close proximity to gas,” McCutcheon says. “One of the challenges is infrastructure and the ability to transport and store the gas.” Crackers, for example, tend to be in close proximity to the source. And as David Moss of Texas-based Armada Oil observes, end-users may tap right into their producers to trim overhead costs. “Locating manufacturing facilities near the producers is smart if you negotiate direct delivery from them and have or build a pipeline for delivery,” he says. On the other hand, **the boom has pushed natural gas prices down across North America, so** as McCutcheon points out, “**the broader effect is not necessarily going to be as geographically specific**.” It’s no surprise, then, that **chemical and plastics developments on the American Chemistry Council’s project list can be found all over the North American map, not just in the neighborhood of the shale reserves.** But **here’s where the story gets particularly positive for the U.S. economy compared with global competitors. “The market is still very inefficient**,” McCutcheon says, “**and that inefficiency in the market creates a competitive advantage in the United States**.” Three cheers for inefficiency? In this case, yes. A more efficient natural gas market would allow more global pricing, as is the case with oil. But, “**natural gas is still essentially regionally priced, so an abundance of natural gas in North America will benefit prices in North America,”** says McCutcheon. **The price advantage is significant. Natural gas may cost five times as much in some other parts of the world, even six or seven times higher in other places. That erases or at least mitigates a lot of the competitive advantages that have driven manufacturing overseas in recent years. The swing of the pendulum is quite noticeable** when one looks into the nation’s liquefied natural gas (LNG) terminals. As the PwC report points out, companies in the past have built LNG import facilities in America, under the assumption that domestic natural gas supplies would be limited. Now that they seem practically unlimited “that trend has reversed, and there is more interest in conversion to LNG export terminals,” the report states. How long will the U.S. advantage last? And aren’t there opportunities to frack in other countries? **“There are certainly significant shale gas reserves outside the United States, but currently the U.S. has the strategic advantage in technology and the ability to extract the gas,”** McCutcheon says, adding that he expects the American advantage to last for some time. **And that’s why the natural gas boom is potentially amazing news in a lot more sectors than just oil and gas development.** “This is a big part of a bigger story,” McCutcheon says. “**It is a major contributing factor to a competitive environment that could lead to a resurgence of manufacturing.”**

***Gas solves Iran prolif***

**Baker Institute ’11** (James A. Baker III Institute for Public Policy of Rice University, October, Shale Gas and U.S. National Security, online, jj)

**Greater shale gas production in the United States**, and eventually Europe, **will also make it more difficult for Iran to profit from exporting natural gas**. **Iran is currently hampered by Western sanctions against investment in its energy sector, so by the time it can get its natural gas ready for export, the marketing window to Europe will likely be closed by the availability of shale gas. This reality may give the United States and its allies more leverage over Iran for a longer period of time, helping to shape more positive outcomes in the Middle East for U.S. and allied interests**. By contrast, **Iran is more likely to become a much larger exporter in the case in which no new shale is developed** (Scenario Two), primarily because of greater LNG demand from the United States. In the constrained shale case (Scenario Two), Iranian LNG exports grow quickly and, by 2040, they are about 75 percent higher than in the Reference Case. Thus, **shale gas plays an instrumental role in delaying the opening for Iran to sell its natural gas, thwarting the country’s ability in the near term to use natural gas exports as a means to develop bilateral relations with major gas-consuming countries and limiting its opportunity to use energy diplomacy to strengthen its regional position or buttress its pursuit of nuclear weapons.** Although there are many complex factors that influence Iran’s political leverage globally, **the circumstance of lower market requirements for Iranian natural gas could make it easier for the United States to achieve buy-in for continued economic sanctions against Iran**. **Lower interest in Iranian gas reduces the chances that Iran can use its energy resources to drive a wedge in the international coalition against it.** **By delaying the need for Iranian gas for over a decade, the United States buys time to find a better solution to the Iranian nuclear problem and leaves open the possibility that political change will take place** in Iran before its influence as a major global natural-gas supplier grows. In addition, **the long delay in the commerciality of Iranian gas means that Tehran will have trouble getting pipelines to India or Pakistan off the ground with mutually acceptable terms, thereby reducing—for at least the time being—a potential source of tension between the United States and India.**

***Global nuclear war***

Stanley **Kurtz**, senior fellow at the Ethics and Public Policy Center, “Our Fallout-Shelter Future”, August 26th 20**06**, http://www.nationalreview.com/articles/218561/our-fallout-shelter-future/stanley-kurtz, (mrl)

Rosen assumes (rightly I believe) that **proliferation is unlikely to stop with Iran**. **Once Iran gets the bomb, Turkey and Saudi Arabia are likely to develop their own nuclear weapons, for self-protection,** and so as not to allow Iran to take de facto cultural-political control of the Muslim world. (I think you’ve got to at least add Egypt to this list.) **With three, four, or more nuclear states in the Muslim Middle East, what becomes of deterrence?** A key to deterrence during the Cold War was our ability to know who had hit whom. With a small number of geographically separated nuclear states, and with the big opponents training satellites and specialized advance-guard radar emplacements on each other, it was relatively easy to know where a missile had come from. But **what if a nuclear missile is launched at the United States from somewhere in a fully nuclearized Middle East, in the middle of a war in which, say, Saudi Arabia and Iran are already lobbing conventional missiles at one another?** Would we know who had attacked us? Could we actually drop a retaliatory nuclear bomb on someone without being absolutely certain? And as Rosen asks, What if the nuclear blow was delivered against us by an airplane or a cruise missile? **It might be almost impossible to trace the attack back to its source with certainty, especially in the midst of an ongoing conventional conflict.** More Terror We’re familiar with the horror scenario of a Muslim state passing a nuclear bomb to terrorists for use against an American city. But imagine the same scenario in a multi-polar Muslim nuclear world. With several Muslim countries in possession of the bomb, it would be extremely difficult to trace the state source of a nuclear terror strike. In fact, this very difficulty would encourage states (or ill-controlled elements within nuclear states — like Pakistan’s intelligence services or Iran’s Revolutionary Guards) to pass nukes to terrorists. The tougher it is to trace the source of a weapon, the easier it is to give the weapon away. In short, **nuclear proliferation to multiple Muslim states greatly increases the chances of a nuclear terror strike. Right now, the Indians and Pakistanis “enjoy” an apparently stable nuclear stand-off**. Both countries have established basic deterrence, channels of communication, and have also eschewed a potentially destabilizing nuclear arms race. Attacks by Kashmiri militants in 2001 may have pushed India and Pakistan close to the nuclear brink. Yet since then, precisely because of the danger, the two countries seem to have established a clear, deterrence-based understanding. The 2001 crisis gives fuel to proliferation pessimists, while the current stability encourages proliferation optimists. Rosen points out, however, that **a multi-polar nuclear Middle East is unlikely to follow the South Asian model**. **Deep mutual suspicion between an expansionist, apocalyptic, Shiite Iran, secular Turkey, and the Sunni Saudis and Egyptians (not to mention Israel) is likely to fuel a dangerous multi-pronged nuclear arms race**. **Larger arsenals mean more chance of a weapon being slipped to terrorists**. **The collapse of the world’s non-proliferation regime also raises the chances that nuclearization will spread to Asian powers like Taiwan and Japan**. And of course, **possession of nuclear weapons is likely to embolden Iran**, especially in the transitional period before the Saudis develop weapons of their own. Like Saddam, **Iran may be tempted to take control of Kuwait’s oil wealth**, on the assumption that the United States will not dare risk a nuclear confrontation by escalating the conflict. If the proliferation optimists are right, then once the Saudis get nukes, Iran would be far less likely to make a move on nearby Kuwait. On the other hand, **to the extent that we do see conventional war in a nuclearized Middle East, the losers will be sorely tempted to cancel out their defeat with a nuclear strike**. **There may have been nuclear peace during the Cold War, but there were also many “hot” proxy wars. If conventional wars break out in a nuclearized Middle East, it may be very difficult to stop them from escalating into nuclear confrontations.**

## Case 2NC

**Solvency**

***No solvency - coal is dying because of natural gas prices and removing regulations alone is insufficient***

**Platts 12** “EIA agrees with many that coal retirements due to more factors than EPA's regulations” Platts <http://platts.com/newsfeature/2012/syngas/index>

**While** some **Republicans** in Congress **pound a constant drumbeat about the negative effects of** President Barack **Obama's "war on coal," a government official had a different take as to why large amounts of coal generation are looking at retirement**. Although environmental regulations have an effect, it is **low natural gas prices relative to historic coal prices and drops in electricity demand that are driving the retirements**, an Energy Information Administration official said in late June at a Bipartisan Policy Center event in Washington that focused on the EIA's Annual Energy Outlook 2012. **Director of EIA's Office of Electricity**, Coal, Nuclear and Renewables **Analysis** Alan Beamon **said that "it's the market forces that are pushing it out of the market,"** **referring to coal-fired generation**. He added that **"to the degree that it leads to retirements, it is often because these plants are marginal in the first place. … It's really the demand situation and the coal price versus gas price that is really making those determinations.**" **Beamon and other speakers underlined a trend affecting coal that has engendered great discussion around the industry** — **dramatically low gas prices due to increased supplies accessed by hydraulic fracturing**, or fracking. **Also, slack electricity demand is playing a huge role in the supply outlook and generation planning,** they said. **EIA, a division of the Department of Energy, is described as independent and impartial,** and its findings do not require approval by other governmental entities. Highlighting the uncertainties in demand, regulations and other factors that are driving fuel choices in the industry, Beamon said that five years ago, some companies were trying to sell off their natural gas plants. "**Gas plants are simply cheaper to operate today**," Beamon said, noting that **the influx of gas is "completely changing dispatch and fuel use in the market**." **Coal has dropped to about 32% of the market share, about the same as natural gas, which rose from about 20%,** he noted. In 2008 and 2009**, EIA saw the first-ever occurrence of two consecutive years of demand drop, he said, adding that "this could have huge implications for this industry." Falling demand "becomes a real challenge, it really changes the industry**," he said. "**There are a lot of coal plants out there that aren't running very much, and some not at all,**" Beamon said. "Th**e economics is what appears to be driving this.**" Southern Company Services Vice President of System Planning Jeff Burleson said that the company is taking a "full portfolio approach" to its generation planning. "We really think that's where the country should be headed," Burleson said. The company plans to invest $20 billion in new resources by 2020, including nuclear, "21st century" coal, natural gas, renewables and energy efficiency, he said. "We're adding a pretty balanced mix of generation resources," he said, adding that the goal is building "as flexible a fleet of generation resources that we can." **However, out of all the fuels, "gas is the one we think has the greatest potential for reliability."** Southern does not predict that gas prices will be extremely high or extremely low on a long-term basis, he said, adding that "market forces are going to come into play" and normalize gas prices. Not ignoring the impact of a suite of new Environmental Protection Agency regulations, he said, "it is consideration of all those regulations that come in to bear for those economic considerations for us." **ICF International Principal Chris MacCracken said that as far as the effect on the future generation mix is concerned, "it's a wide range of things, it's not just one or the other policy** … it's all of the above factored in." He agreed that **it is older, smaller coal-fired units that aren't running and are looking at possible retirement**. When it comes to analyzing the future supply mix, "there are a lot of things we don't know, but it does help to test things out," MacCracken said. EIA officials said that their recent energy outlooks do not account for increased regulation of fracking that might be coming as the drilling method gets more scrutiny from the public and regulators.

***Coal demand high --- economics are key not the EPA***

**Parnell 1-10** John Parnell, Journalist covering all things climate change for http://rtcc.org ., Responding to Climate Change, 1-10-13, Coal comeback threatens Obama’s climate change policy, <http://www.rtcc.org/coal-comeback-threatens-obamas-climate-change-policy/>, jj

**New figures released** this week by the Energy information Administration (EIA) **reveal that the use of coal by power plants is increasing again after being displaced by cheap domestic shale gas in recent years.**

In 2011 Coal’s share fell below 40% for the first time since 1978. Now those **figures are heading up again**, and emission levels will surely follow.

Coal emits around twice the CO2 of natural gas per unit of energy generated as well as generating greater levels of other pollutants that damage human health.

Climate change envoy Todd Stern hailed the 8.6% drop in electricity related emissions at the UN climate talks in Doha last month but **rising shale gas prices are making coal cost competitive again.**

**Despite claims** from Republicans that President **Obama is waging a war on coal, closer examination finds US coal mining in good health and new power plants built with the support of Federal** government offsetting the job losses from dirty, retiring coal power stations.

“We shouldn’t be paying coal producers that are still doing well and we shouldn’t be subsidising dirty energy given the climate reality that we are facing,” says Janet Redman, co-director of the Sustainable Energy and Economy Network at the Institute for Policy Studies in Washington.

“That extends to support for exporting coal as well. These should be off the table and Obama should be pushing for that in the next four years,” Redman told RTCC adding that the present “all of the above energy strategy” should focus more on clean energy.

Phoney war

The War on Coal was the name of a Mitt Romney attack ad during the election, a running theme with a conservative Senate energy committee and even the name of a bill designed to reverse environmental legislation for coal power plants.

**If** President **Obama really is focused on wiping out the coal industry, it is not his most successful campaign.**

The latest short-term EIA figures suggest **a projected rise in US natural gas prices could immediately see coal consumption creep back up**. It expects the coal share of total electricity generation to rise from 37.6% in 2012 to 39.0% in 2013 and 39.6% in 2014.

“If the world continues to use coal in the way that we are using it today and by the world, I mean in particular, not just the United States, but China, India, and Russia, it’s a pretty bad dream,” said US Energy Secretary Steven Chu clarifying comments he made prior to his appointment.

Legislation by the Environmental Protection Agency (EPA) to regulate the emissions of coal power plants is the root cause of most of the accusations against the current administration.

For some utilities it was cheaper to close down than upgrade older, dirtier coal power plants. Installing the necessary infrastructure to meet the requirements is not cheap, but **the EPA rules are not the only factor.**

Analysts at the Brattle Group found that coal power plants capable of generating between 59-77 GW would shut down in the next five years depending on whether the EPA took a strict or lenient line in the coming years.

**A more pertinent factor in these closures is the low price of natural gas** in the US because of the rapid development of shale gas. This has driven gas prices below those of coal, more than halving in two years from 2007 and 2009.

**2nc – Energy Not Key – Inshoring inev**

***Manufacturing inshoring is bigger than any one variable --- energy prices aren’t key***

**Fishman 12** Charles Fishman is the author, most recently, of The Big Thirst: The Secret Life and Turbulent Future of Water. DECEMBER 2012 ATLANTIC MAGAZINE, The Insourcing Boom, <http://www.theatlantic.com/magazine/archive/2012/12/the-insourcing-boom/309166/?single_page=true>, jj

**Many offshoring decisions were based on a single preoccupation—cheap labor**. The labor was so cheap, in fact, that it covered a multitude of sins in other areas. **The approach to bringing jobs back has been much more thoughtful.** ***Jobs are coming back not for a single, simple reason, but for many intertwined reasons—which means they won’t slip away again when one element of the business, or the economy, changes.***

**Ext – Manufacturing High**

***Manufacturing strong now --- ignore their ev***

**Perry ‘12**

Dr. Mark J. Perry is a professor of economics and finance in the School of Management (http://www.umflint.edu/departments/som/) at the Flint campus of the University of Michigan (http://www.umflint.edu/). Perry holds two graduate degrees in economics (M.A. and Ph.D.) from George Mason University (http://www.gmu.edu/) in Washington, D.C. In addition, he holds an MBA degree in finance from the Curtis L. Carlson School of Management (http://www.csom.umn.edu/) at the University of Minnesota (http://www.umn.edu/). Visit Dr. Perry's Carpe Diem Blog (http://mjperry.blogspot.com/) for economics and finance.

1-2-12, Seeking Alpha, Decline Of Manufacturing Is Global Phenomenon: The World Is Better Off Because Of It

<http://seekingalpha.com/article/317013-decline-of-manufacturing-is-global-phenomenon-the-world-is-better-off-because-of-it>, jj

The chart above shows manufacturing output as a share of GDP, for both the "world less the U.S." and the U.S. alone, using United Nations data for GDP and its components at current prices in U.S. dollars from 1970 to 2010. **We hear all the time** from Donald Trump and others **about the "decline of U.S. manufacturing,"** about how nothing is made here any more, and how everything that used to be made here is now made in China and other low wage countries. **An underlying assumption of most of those claims is that if the manufacturing base is shrinking in the U.S.** (the "hollowing out of U.S. manufacturing"), **that there is an offsetting manufacturing gain that is captured elsewhere in the world, as manufacturing output supposedly shifts from the U.S. to other countries, with world manufacturing remaining constant. In reality, the chart** above **shows that the decline in U.S. manufacturing** as share of GDP between 1970 and 2010 **is a really a global phenomenon as the entire world becomes increasingly a services-intensive economy**. The manufacturing/GDP ratio in the U.S. fell from 24% to 13% between 1970 and 2010, while the world ratio fell at almost the same rate, from 27% to 16%. **As a share of GDP, manufacturing has declined in most countries since the 1970s.** **A few examples: Australia**'s manufacturing/GDP ratio went from 22% in 1970 to 9.3% in 2010, **Brazil**'s ratio went from 24.5% to 13.5%, **Canada**'s from 19% to 10.5%, **Germany**'s from 31.5% to 18.7%, **and Japan**'s from 35% to 20%. Bottom Line: When we hear claims that "nothing is made here anymore," **it's not really the case that somebody else is making the stuff Americans used to make as it is the case that we** (and others around the world) **just don't manufacture as much "stuff" any more in relation to the growing levels of national income**, which the graph above clearly shows. The main reason that the manufacturing/GDP ratio has declined in the U.S. and around the world is that **productivity gains for durable goods have significantly lowered the price of those goods relative to: a) the prices of services, and b) household incomes**, as I pointed out in this CD post on the "miracle of manufacturing." In other words, **the declining manufacturing/GDP ratio reflects declining prices for manufacturing goods, *which is a sign of economic progress*, not regress**. **The standard of living around the world today, along with global wealth and prosperity, are all much, much higher today with manufacturing representing 16% of total world output** (including the U.S.) compared to 1970, when it was almost twice as high at almost 27%. And for that progress, **we should celebrate, not complain about the "decline of manufacturing**."

**A2: Spikes**

***No price spikes – natural gas companies, mild winter, excessive surplus***

Larsen **Kusick**, analyst, “Natural Gas Prices Will Stay Low Longer Than Anyone Expects,” The Growth Stock Wire, March 26, 20**12**, <http://www.growthstockwire.com/3004/Natural-Gas-Prices-Will-Stay-Low-Longer-Than-Anyone-Expects>, accessed 9-18-2012.

Energy investors need to make a long-term shift in their thinking. ¶ ¶ **Last week, the U.S. Energy Information Administration reported natural gas inventories increased for the first time this year.** ¶ ¶ By itself, the increase may not seem like a big deal... except that **natural gas storage levels are already at record levels for this time of year.** ¶ ¶ **This is the latest piece of evidence that natural gas prices will likely stay low longer than anyone betting otherwise can stay solvent.** ¶ ¶ Let me explain...¶ ¶ **Natural gas is a big part of heating homes during the winter months. So as colder weather arrives around late October, demand for natural gas typically moves above production.** In other words, we start using enough natural gas to work off the built-up inventory. Then, in the warm months, inventory rises.¶ ¶ This cycle repeats year after year. **Except this year, things are out-of-whack.**¶ ¶ As most Growth Stock Wire readers already know, **natural gas production is skyrocketing.** Back in November, I noted that **even after double-digit production growth in 2011, natural gas drillers like Range Resources and Cabot Oil were set to increase their natural gas production by 40% to 50% in 2012.**¶ ¶ **Add to that an unusually mild winter in most of the U.S., and natural gas inventories are at extreme levels.¶** ¶ Last week's inventory report confirmed that the U.S. has 2,380 billion cubic feet of natural gas sitting in storage. That's a record high for this time of year and 47% more than we had in storage a year ago. Put another way, **we're just starting the seven-month period when excess natural gas production starts going into storage... and inventories are already way above normal.** ¶ ¶ Last week, the Wall Street Journal reported that natural gas storage facilities are at 58% of capacity. It's the first time in five years that the U.S. has been above 44% of capacity in mid-March.¶ ¶ **Meanwhile, of course, U.S. natural gas prices are sitting near 10-year lows.** ¶ ¶ **With no sign of increased demand until next winter, producers are trying to cope by cutting production.** As my colleague Frank Curzio noted two months ago, Chesapeake, America's self-described "champion of natural gas," already announced a 50% cut in "dry" gas production. ("Dry" gas is industry-speak for wells that produce natural gas without valuable "liquids" like ethane, propane, and butane.) ¶ **¶ Normally, when production shuts down, supplies fall, and inventories drop... prices rise. But I don't expect that to happen with natural gas... not for a LONG time**.¶ ¶ You see, during Chesapeake's quarterly conference call last month, analysts asked why the company had adjusted its financial expectations for 2012 but not 2013. CEO Aubrey McClendon replied, **"If the gas market is attractive enough, there's a likelihood that we could produce more gas in 2013 than what we presently have modeled."** ¶ ¶ That's just another way of saying, **"The instant that natural gas prices go up slightly, we're gonna crank up the rigs and start producing again."** ¶ ¶ In short**, there's no end in sight to low natural gas prices. Inventories are already at record highs, which creates downward pressure on prices. Meanwhile, producers like Chesapeake have their "finger on the button"... ready to dump more natural gas onto the market if the price rises.¶** ¶ For energy investors, it's critical to focus on companies that produce oil, not just natural gas. And it's a good idea to consider who benefits from long-term low prices. This includes natural gas engine-maker Westport Innovations, "natural gas highway" play Clean Energy Fuels, and natural gas exporters like Cheniere Energy.¶ ¶ There's no sign of this trend changing any time soon. **If you're betting on a dramatic recovery in natural gas prices, you're not likely to see them this year... or possibly for years to come.** There are much better spots for your money.

***\*\*No price spike this decade***

**Pirog & Ratner 11/6/12** Robert Pirog, Specialist in Energy Economics, Michael Ratner, Specialist in Energy Policy, November 6, 2012, Congressional Research Service, Natural Gas in the U.S. Economy: Opportunities for Growth, <http://www.fas.org/sgp/crs/misc/R42814.pdf>, jj

The advent of shale gas and the decline of U.S. natural gas prices has attracted global attention and prompted countries to try to emulate the U.S. success in developing their unconventional gas resources. Although other countries have touted their unconventional natural gas resources, no country has achieved the level of development of the United States, except Australia, in developing their coal seam gas. Canada is moving ahead with its shale gas development, but lags behind the United States. As can be seen in Figure 5, U.S. and other regional natural gas prices around the world moved in sync for most of the last decade even though there is not a global market for natural gas as there is with oil. From 2008 to 2009, natural gas prices dropped worldwide because of the decrease in demand from the decline in economic activity. **U.S. shale gas** was beginning to come to market in 2007/2008 and by 2010/2011 it **changed the trajectory of U.S. natural gas prices** from those of the rest of the world. In 2011, the rest of world faced higher prices than in 2010 for natural gas, but **the United States saw its natural gas price decline by 9%.** U**.S. natural gas prices have continued to trend lower ever since, and many analysts forecast U.S. natural gas prices to remain relatively low at least through the end of this decade and possibly for longer.**

***\*\*Storage capacity is overwhelmed --- no risk of a short-term price spike***

**Goho 1/2/13** Shaun Goho is a lecturer on law at Harvard Law School and a clinical instructor in the school’s Emmett Environmental Law and Policy Clinic, where he supervises students working on projects addressing a variety of environmental issues, including climate change, renewable energy, and water pollution. His research interests include environmental history and administrative law. 1-2-13, Yale Environment 360, In U.S., the Lure of Export May Further Fuel Natural Gas Boom, <http://e360.yale.edu/feature/in_us_the_lure_of_export_may_further_fuel_natural_gas_boom/2605/>, jj

Yet this round of battles had barely ended before another one began. This time, the push is not to build terminals to import LNG, but instead to export it. **Shale gas production has increased so rapidly that not only is there enough gas — there is too much**. **Within a couple of years, the market has flipped from impending shortages to a massive glut. As a result, prices have plummeted and storage capacity has nearly been overwhelmed.**

**L**

***We have a 100% link --- zero sum***

**CNBC 6/20/12** “Natural Gas a Raging Bull in Its Battle With Coal” http://www.cnbc.com/id/47279731/Natural\_Gas\_a\_Raging\_Bull\_in\_Its\_Battle\_With\_Coal

For U.S. power plant operators, the economics of natural gas may have already dethroned coal as the nation's key source of electrical power. AEP’s Philip Sporn coal-fired power plant in West Virginia. It was partially retired in 2011 and is slated to be entirely mothballed by 2016. "Natural gas is, and is likely to remain, the low-cost option for new generation capacity," says Mark Fulton, managing director of Deutsche Bank's DB Climate Change Advisors. **The** U.S. Energy Information Administration, **EIA, estimates** **that nearly** **500 trillion cubic feet of natural gas are recoverable in shale formations**, like the Marcellus one that spans New York, Ohio, Pennsylvania and West Virginia, significantly boosting national gas reserves to what some estimate is a 100-plus-year supply. An abundant supply of fuel is great, but **modern gas-fired power plants also have lower operating costs than their antiquated coal-fired counterparts, folding in technological improvements that span not just years, but generations**. A November 2010 EIA report on power plant operating costs — the latest data available — found that a typical coal-fired plant costs $2,800 to $3,200/kilowatt of generation capacity, while a modern natural gas-fired plant costs around $1,000/kilowatt. Combine significantly cheaper fuel costs and leaner operating costs, and electricity from a convention coal fired plant costs 9.5 cents/per kilowatt hour to produce, compared with 6.6 cents at a conventional modern gas plant, according to EIA's Energy Outlook 2011. Lower costs are already having an effect. According to the most recent EIA figures, natural gas use in electricity generation rose by 40 percent year-over-year in March, while coal's market share fell by 20 percent. While coal prices have also dropped by over 25 percent since April, experts say it won't affect the preference for natural gas. The EIA says that of the 52 gigawatts (gw) of new power generation capacity to be added to the U.S. grid by 2015, half will come from natural gas. That's 10 times that of coal, which will fall into fourth place behind solar and wind power. **The ascension of natural gas has also led to a spate of coal-fired power plant closings**. also plan to shutter some coal plants. **In late May, AEP subsidiary Kentucky Power withdrew its $1 billion plan to upgrade one of its aging coal-fired plants in the heart of coal country, and didn't rule out repowering it with natural gas. Of the nation's 600 coal-fired power plants** — roughly 44 percent of U.S. power generation capacity — **most are in the Midwest, with Ohio, Indiana, Pennsylvania and Illinois home to half of them**. Some of **those states also happen to be home to the Marcellus shale formation.**

***production key to jumpstart the recovery***

**Baily & Verleger ‘12**

Martin Neil Baily, Senior Fellow, Economic Studies , Philip K. Verleger Jr., Peterson Institute for International Economics, Brookings, June 27, 2012, Could Cheap Gas Save the Economy? <http://www.brookings.edu/research/opinions/2012/06/27-cheap-gas-baily>, jj

**Something is badly needed to get the economy moving again and avoid another slowdown.** The good news is that **cheaper gas could be the answer. America has hit the energy jackpot with new techniques to extract** oil and **gas from shale. The recent widespread use of** a technique called hydraulic fracturing, or "**fracking," and improved drilling technologies such as horizontal completion to harvest gas from shale, could provide a much-needed economic boost. Shale extraction represents one of the most important developments for the economy in the last 60 years. It's pushing down energy prices and creating many new opportunities for jobs, investments and manufacturing. And the new innovations are unique to the United States. Although other countries will exploit shale, none will come close to the low costs in the U.S. That's because the U.S. has a unique governmental structure in which many powers remain with the states, along with a very competitive market for the product**, as opposed to the monopolies and oligopolies that control the market in almost every other country. **While it may sound like the latest energy fad, the shale boom is for real and a serious game changer because of its size and potential longevity.** Based on equivalent amounts of energy, natural gas has been about half as expensive as oil for many years. The Energy Information Administration now predicts gas will be only a quarter or a fifth of the cost of oil through 2030, a big enough price difference to overcome the disadvantages of gas, such as its lower energy intensity by volume. How did the situation change? Was it because of the tax advantages given to the large oil companies? In fact, no. Big oil largely gave up on drilling onshore in the U.S. to concentrate on finding big fields in other countries or offshore. But small, innovative companies continued to drill for gas and oil here at home and figured out how to drill sideways and use computer technology to find deposits and extract them. Financial markets helped make this happen because small drillers could sell oil and gas using futures contracts and protect themselves against wild price swings. An economic boom **The prospect of cheap gas for years to come is already spurring investment**. Waste Management Inc (WM, Fortune 500). is investing in natural gas trucks that cost $30,000 more but save $27,000 a year in fuel costs. The big engine manufacturers are developing long-haul trucks to operate on liquefied natural gas. **Eighty percent of future electricity generating capacity is expected to be from natural gas and many coal-fired plants may be shifted to gas. The market incentives are already there and jobs are flourishing. Government could throw gas on this economic fire by** allowing facilitation, better coordination and **cutting of red tape between federal and state agencies**. Working together, government at all levels can set clear standards that protect both people and profits, yet speed the approval process to create more jobs at a faster pace. The industry, too, needs to cooperate by disclosing the nature of the fluids they are injecting during the fracking process, and by limiting emissions from the thousands of wells they will drill to alleviate some environmental concerns. Environmentalists should recognize the longer-term benefits of abundant gas supplies -- burning gas emits a lot less carbon than burning oil and coal, and extracting it is far cleaner than extracting oil from Canadian tar sands -- and work to achieve a compromise that allows rapid development with the necessary safeguards. And President **Obama should help promote a cleaner fossil fuel that shows such promise and is already creating new jobs.** But government support isn't the main problem. Drilling is being authorized today at rates that exceed the industry's capacity to drill. The real problem is that drilling for shale gas and oil could be slowed or stopped if disputes over fracking are not resolved in a way that addresses the public's concerns. Activity has already been suspended in some promising areas. **Cheap gas** may not be enough to offset the drag of a slowing global economy this year, but it **will boost long-term investment, help the beleaguered manufacturing sector and increase exports. Building petrochemical plants could suddenly become attractive in the United States. Manufacturers will "reshore" production to take advantage of low natural gas and electricity prices. Energy costs will be lower for a long time, giving a competitive advantage to companies that invest in America, and also helping American consumers who get hit hard when energy prices spike.** Other countries like China will attempt to replicate America's good luck, but will fail because they lack the unique legal, political and market institutions which have led to our success. **After years of bad economic news, the natural gas windfall is very good news. Let's make the most of it.**

**Iran**

***Mid East prolif isn’t stabilizing – multiple reasons.***

Richard **Russell, Georgetown Security Studies Professor, ‘6** (Military Review, Nov/Dec, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA507201&Location=U2&doc=GetTRDoc.pdf>

How would the Middle East be affected by numerous states armed with nuclear weapons? The good news is that some international security experts argue that the spread of such weapons would actually stabilize the region. In fact, they argue that international relations would be enhanced if nuclear weapons proliferated slowly, if states had time to become accustomed to them, and if nuclear arsenals were immune from preemptive strikes. They argue that nuclear deterrence is easy to under- stand and to put into practice: states- men would realize that the costs of going to war with nuclear weapons would be prohibitive, which would reduce the risk of war between states to nearly zero. To support their argument, these analysts cite the fact that two nuclear-armed states have never waged war against one another.3 The bad news is that **these experts probably are dead wrong. The theory is appealing, but theory rarely, if ever, conforms to reality. States armed with nuclear weapons in the Middle East might well wage war against one another under a variety of strategic circumstances.** **Iran might undertake conventional military operations against neighboring states calculating that its nuclear deterrent would prevent a retaliatory** American or Arab Gulf state **response. Saudi Arabia**, in turn, fearing its conventional forces are inferior, **could resort to the tactical use of nuclear weapons to blunt Iranian conventional assaults** in the Gulf, much as NATO had planned to do against Warsaw Pact forces in cold-war Europe. Egypt had no nuclear weapons in 1973, but this did not stop it from attacking Israeli forces in the Sinai. Along with other Arab states, **Egypt could use conventional forces in saber rattling against Israel, and conventional clashes could erupt into a general war**. Right now, American forces cannot deter a Syria without nuclear weapons from sponsoring jihadist operations against U.S. forces in Iraq**. A Syria armed with a nuclear deterrent might be emboldened to undertake even more aggressive sponsorship of guerrilla war against U.S. and Israeli forces, and this could tip a crisis into open warfare. Sitting on hair triggers in the narrow geographic confines of the Middle East, states armed with nuclear weapons would be under strong incentives to use them or lose them and to fire nuclear ballistic missiles in a crisis**. At the height of a regional crisis, **Iran,** for example, **might launch** huge salvos of ballistic missiles armed with **nuclear weapons against Israel in order to** overwhelm Israeli ballistic missile defenses, **decapitate** the **Israeli** civilian and military **leadership**, **and reduce the chances of Israeli nuclear retaliation**. **During the cold war, the United States and the Soviet Union had** about 30 minutes of breathing time from the launch of intercontinental ballistic missiles to their impact. That was **30 potential minutes of precious time to determine whether warnings of launches were real. In the Middle East, there would be only a handful of such warning minutes, and regimes would feel even more vulnerable than the United States and the Soviet Union did during the cold war**. Many nation-states in the Middle East resemble city-states more than industrialized nations; they have much less time to hide their leaders from enemy attack and fewer places to hide them. **Nuclear-armed states in the Middle East could also transfer nuclear weapons to terrorist groups.** Iran is the top concern on this score. Over the past two decades, Tehran has nurtured Hezbollah with arms, training, logistics, ideological sup- port, and money to enable it to serve as an appendage of Iranian foreign policy. Iranian support helped Hezbollah destroy the U.S. Marine barracks in Lebanon in the early 1980s and kill about 250 Marines.4 According to a former director of the FBI, senior Iranian. government officials ordered Saudi Hezbollah to bomb Khobar Towers in Dhahran, Saudi Arabia, in 1996.5 The explosion killed 19 U.S. airmen. **Iran has used Hezbollah to do its dirty work and maintain “plausible deniability” to reduce the chances of American retaliatory actions**. The strategy worked because the United States has yet to retaliate militarily against Iran. Calculating that its nuclear weapons would deter conventional retaliation against it, **a nuclear-armed Iran would be emboldened to sponsor even more aggressive and devastating attacks to push American forces out of the Middle East. A Middle East loaded with states armed with nuclear weapons also would increase the odds of “loose nukes.**” We worry today—and probably not enough—about Russia losing control of its nuclear weapons, but **nuclear worries about Russia today might pale in comparison to those about the Middle East tomorrow**. Saudi Arabia already has a slow- boiling insurgency on its hands with Al-Qaeda, which might someday manage to take over a Saudi nuclear weapons depot. The Saudi regime in the future might have to face a civil war with Iranian- or even Iraqi- inspired Shi’ites in eastern Saudi Arabia. The Saudi royal family could even fall victim to internal power struggles between warring Saudi princes, and control of the Saudi nuclear arsenal might deter- mine the winner.6 Militant Islamists inside Egypt’s military ranks assassinated President Anwar Sadat. Egyptian Islamic extremists might again organize within Egypt’s military to take over Egyptian nuclear weapons stocks or to topple the regime itself. The Iranian revolution in 1979 blindsided the United States and converted a security partner into a bitter foe virtually overnight. A similar watershed event could occur in Egypt or Saudi Arabia in the next 25 years. In short, **in the Middle East of the future, numerous nuclear weapons stores will sit atop potentially explosive political powder kegs like the one that exists in Pakistan today**.

## 1NR

**2NC Extension #4 – China Coal Is Cleaner**

***China is comparatively cleaner than the US in cleaning coal***

KEITH **BRADSHER**, New York Times, May 10th 20**09**, http://www.nytimes.com/2009/05/11/world/asia/11coal.html

TIANJIN, China — **China’s frenetic construction of coal-fired power plants has raised worries** around the world **about the effect on climate change**. China now uses more coal than the United States, Europe and Japan combined, making it the world’s largest emitter of gases that are warming the planet. **But largely missing in the hand-wringing is this: China has emerged** in the past two years **as the world’s leading builder of more efficient, less polluting coal power plants, mastering the technology and driving down the cost**. **While the United States is still debating whether to build a more efficient kind of coal-fired power plant** that uses extremely hot steam, **China has begun building such plants at a rate of one a month. Construction has stalled in the United States** on a new generation of low-pollution power plants that turn coal into a gas before burning it, although Energy Secretary Steven Chu said Thursday that the Obama administration might revive one power plant of this type. **But China has already approved equipment purchases for just such a power plant, to be assembled** soon in a muddy field here in Tianjin. “**The steps they’ve taken are probably as fast and as serious as anywhere in power-generation history**,” **said Hal Harvey, president of ClimateWorks**, a group in San Francisco that helps finance projects to limit global warming. **Western countries continue to rely heavily on coal-fired power plants built decades ago** **with outdated, inefficient technology that burn a lot of coal and emit considerable amounts of carbon dioxide**. **China has begun requiring power companies to retire an older, more polluting power plant for each new one they build**. **Cao Peixi, the president of the China Huaneng Group, the country’s biggest state-owned electric utility** and the majority partner in the joint venture building the Tianjin plant, **said his company was committed to the project even though it would cost more than conventional plants**. “**We shouldn’t look at this project from a purely financial perspective**,” **he said. “It represents the future**.”

**2NC Extension #8-10 – Water**

***China environmental movements are down now --- and even if there are a lot of protests now --- it still doesn’t collapse the CCP --- you should treat this card as truth because they have not raed a SINGLE piece of UQ ev for chinese environmental protests --- the 1ar is too late --- no second bite at the apple***

Tang **Hao**, deputy professor at South China Normal University, a Fulbright scholar and a columnist., 30.01.20**13**, China Dialogue, China's street protests won't change failing system, <http://www.chinadialogue.net/article/show/single/en/5660-China-s-street-protests-won-t-change-failing-system>, jj

Environmental groups unable to represent the public

Routes to judicial redress have also been blocked, with no legislation allowing environmental groups to bring cases on behalf of the public. This means most activists push hard on environmental education and advocacy, but are unable to protect the environment on behalf of residents. Worse, the system obstructs the registration and operation of environmental groups. So these groups, which should represent and mediate between the people and the government, are unable to play their role, leaving the public to go it alone.

With neither the government nor environmental groups able to play their part, a new environmental force has taken the stage – direct and spontaneous public campaigns. In China, the “environmental movement” used to mean lobbying from NGOs, reporters, academics and university students. Now it includes ordinary people in large-scale street protests.

It was only after SEPA’s crackdowns were over that the country saw this wave of environmental campaigns. China’s street protests are a case of the people taking power into their own hands after environmental management by the government has failed.

Participants in the public protests of recent years have been mainly locals. The cases are very similar, and are becoming more frequent and intense. They rely heavily on new forms of media, as people use social networking to form groups, creating a form of community protest. In Dalian and Shifang, such protests changed government decisions, relieving to some extent the risks of pollution.

Street protests won’t change the system

Of course, there are also problems. Mass movements can radicalise. The speed of microblogs and the ease with which they bring people together allows for personal and emotional reactions to be exaggerated. Irrational ideas are easily spread and emboldened. And the decentralised nature of these discussions makes it harder to control public opinion.

More important is the fact that, no matter how loud these protests are, they don’t change the system. Many projects have been stopped due to mass protests, but decision-making methods stay the same, as does the power of developers.

China’s so-called environmental movement looks passive – it is dependent on how the government reacts. If the reaction is poor, so will be the outcomes for the movement. You could say that the quality of China’s environmental movement depends on the quality of its participants, while its outcome depends on the quality of government. This way of protecting the environment offers no guarantees.

***Also - Drought devastates the economy***

Nathan **Nankivell**, Senior Researcher at the Office of the Special Advisor Policy at Maritime Forces Pacific Headquarters, “The National Security Implications of China’s Emerging Water Crisis”, China Brief Volume: 5 Issue: 17. August 2, 20**05**,

While the affects of China’s water crisis on human health and quality of life are key considerations for Beijing, **the CCP’s primary concern is the impact that water shortages have on the economy**. Over the past 20 years, much of the Party’s domestic and international **legitimacy has been predicated squarely upon the astonishing economic progress** witnessed throughout the nation. Averaging close to 10% annual growth, China has become the model for other developing nations in the region. Its once agriculturally rooted economy has transformed into a world factory, supplying products internationally, while simultaneously importing resources at levels that have driven world commodity prices to new highs over the past 24 months. The result has been steadily increasing average incomes and major improvements to average individuals’ standard living that have helped ensure the Party’s continued rule. However, **water shortages threaten to undue much of these gains.** At the state level, the Party is quickly coming to grips with the economic costs associated with the crisis. Billions have been spent on projects aimed at increasing water supplies. From local community projects all the way to the North-South Water Diversion Scheme, the cost of accessing or redirecting water resources will cost tens if not hundreds of billions over the coming decades: estimates of the North-South Water Diversion alone predict a final price tag of at least $25 billion. Water shortages are also limiting the productive capacity of industry and farmers alike, resulting in less tax revenue and billions in forgone economic activity. As an example, experts estimate that **pollution of the Yellow River costs the Chinese economy between $1.39 and $1.89 billion annually**. [6] And even more vexing and economically devastating are the billions required to clean polluted rivers and lakes throughout the country not only to make them fit for human use but also to create a national environment that can be compared with other developed nations. Meanwhile, **more money will have to be invested in fixing** ageing and decrepit **infrastructure** that is blamed for the loss of hundreds of millions of cubic meters of water. Finally, the health costs for tens of millions of citizens who have been exposed to toxic drinking water will severely impact the state and its limited health resources in the years to come, possibly helping to finally undo the already disintegrating concept of universal health care.

**A2: China Has Hit Peak Coal**

***2) If they win this argument we have a shorter route to a link – China is absolutely dependent on coal imports for their economy***

Jonathan **Watts** is Asia environment correspondent for The Guardian, “China's Coal Addiction”, December 2nd 20**10**, http://www.foreignpolicy.com/articles/2010/12/02/china\_s\_addiction\_to\_coal

China recently overtook the United States as the world's biggest emitter of greenhouse gases, largely because it is so dependent on this fossil fuel. For each unit of energy, coal produces 80 percent more carbon dioxide than natural gas and 20 percent more than oil. This does not even include methane released from mines, for which China accounts for almost half the global total, or spontaneous combustion of coal seams, which release 100 megatons of energy from coal each year. **China's economy is utterly dependent on coal.** **It provides 69.5 percent of the country's energy, a greater degree of reliance than that of any other major country**. **Cheap coal generates electricity for Beijing, Shanghai, and Chongqing, fires the steel mills of Huaxi, powers the production lines of Guangdong, and allows consumers in the West to buy Chinese goods at knockdown prices**. No other fuel has such an impact on the environment, both local and global.

***1) China doesn’t need domestic – imports are just cheaper***

Richard K. **Morse** leads global coal market research at the Stanford Program on Energy and Sustainable Development (PESD), and Gang He is a research associate at the Program on Energy and Sustainable Development (PESD)., “THE WORLD’S GREATEST COAL ARBITRAGE: CHINA’S COAL IMPORT BEHAVIOR AND IMPLICATIONS FOR THE GLOBAL COAL MARKET”, August 20**10**, http://iis-db.stanford.edu/pubs/22966/WP\_94\_Morse\_He\_Greatest\_Coal\_Arbitrage\_5Aug2010.pdf

Once a largely isolated coal market, **China now plays a central role in determining global trade flows and prices.** Understanding Chinese import behavior under current and future market conditions is therefore imperative for any analysis of the global coal trade. **We have put forward a theory of Chinese import behavior based on arbitrage relationships between China and the global market and proved that theory** in the ChinaCoalArb model. **Our findings indicate that China is a “cost minimizer” in the international market that will import heavily when the price is right** – as it was in 2009 due to a confluence of circumstances we have described here – **and largely rely on domestic coal when imports are unattractive.** **The nature of Chinese demand for international coal is therefore fundamentally different from India**, the other source of dramatic demand growth in international coal markets. **India is structurally short coal because demand growth** (mainly for power) has outstripped domestic coal supplies. **China, on the other hand, is now the world’s largest coal arbitrage trader**. **This means that the relationship between China’s domestic coal price and the international coal price will be one of the key factors in determining global trade flows in the coming decade as China could just as easily buy 15-20% of internationally traded coal as it could buy very little. China’s role as world’s largest coal arbitrageur has a hugely significant implication for the global coal market: it links the international price of coal to China’s domestic price.** **China’s buying and selling activity on the margins of its massive domestic coal market bring domestic and global prices closer to parity** (though at present not to complete parity). **In other words, what happens in the mines of Shanxi will impact the price of power in Munich. The unique politics and economics of the Chinese coal market are now therefore by necessity the politics and economics of the global market, and whether or not China imports coal in a given year, “the China factor” will increasingly define how the world sells, buys, and uses coal.**

***2) China is finding huge new fields***

Shivom **Seth**, Mineweb, Dec 23rd 20**11**, http://www.mineweb.com/mineweb/view/mineweb/en/page38?oid=142229&sn=Detail

**China has** reportedly **discovered an 89**.2 **billion tonne coal reserve** at Sha'er Lake in northwest Xinjiang Uygur, **in a find that is being termed the largest in Asia. The new find is expected to be** slightly **bigger than Inner Mongolia, currently China's largest coal producing region** - it surpassed that of the Shanxi province to become the largest coal producing region last year with an annual output of 782 million tonnes. **Coal output rose 26.6% year on year to 908 million tonnes in the first 11 months of the year**. **The output in November alone has been pegged at 94.1 million tonnes, up 18.1% year on year from the Inner Mongolia region**.

**2NC Extension #5-7 – Bottlenecks**

***Domestic coal causes major bottlenecks in China***

Leslie **Hook** in Beijing, Financial Times, August 26th 20**10**, http://www.ft.com/cms/s/0/4ed43dd6-b03c-11df-939d-00144feabdc0.html#axzz23YD08IXt

**China** is now the world’s largest energy consumer, according to the International Energy Agency. Its **energy needs have grown so fast that infrastructure can’t keep pace**. **Coal, which fuels 70 per cent of the country’s electricity, is notoriously hard to transport from the inland provinces** **where it is mined** to the southern and eastern industrial belts where it is most needed. **The traffic jam originated in Inner Mongolia, one of the country’s top coal producers, and stretched towards Qinhuangdao**, the port from which coal from north-west China is shipped down to power plants in the southern regions. Although road construction contributed to the gridlock, the jam only went one way: west to east. “**The main culprit of this massive jam is a steep increase in overloaded trucks** – **the vast majority of which are carrying coal,**” the Beijing Youth Daily newspaper said on Wednesday. **While transporting coal by truck is more than twice as expensive as shipping it by rail, China's coal producers have few other options as rail freight capacity is overloaded**. **The coal trucks also have a history of clogging the roads**. Earlier this summer **a huge traffic jam on the same highway** from Inner Mongolia **lasted for a month**. **China has poured money into aggressive road and rail expansion** programmes, including constructing more high-speed railways to ease passenger traffic on existing lines, and to expand the network of dedicated freight routes. "Coal transport is a very very high priority for the Ministry of Railways, probably their key performance indicator," said Martin Joerss, head of McKinsey's transportation practice in greater China. **But** the expansion isn’t happening fast enough. “**The railway transportation bottleneck has not yet been fundamentally resolved,**” the China Coal Transport and Distribution Association noted in a report on Wednesday. **China’s railroads carried some 1.2bn tonnes of coal in the first seven months of this year, up 17 per cent from the same period last year. That’s about 60 per cent of total coal movements during that time, according to official statistics.** The Ministry of Railways earlier asked rail networks to prioritise coal shipments during the summer, when electricity demand peaks because of air conditioning use. Several of China’s larger coal companies, including Yanzhou coal, have purchased stakes in railway operators to ensure that their coal shipments get priority. “As long as the railway bottleneck remains, it will support the Chinese coal price, and help support the regional coal price,” said Yongtao Shi, analyst at Bank of America Merrill Lynch. Mr Shi added that coal transportation woes could boost China’s purchases of coal overseas**. China’s demand is growing so quickly that the transportation bottleneck will get worse before it gets better**. China's coal demand is set to rise by more than 200m tonnes next year, while the primary coal railway from Inner Mongolia to the coast is adding just 30m tonnes of capacity. Even though coal prices softened in recent weeks on cooling Chinese coal demand, it's still unlikely that the railroads will catch up anytime soon.

***Traffic jams tank Chinas economy***

**Anderlini, August 23, 2012**, “Jamil, s the Beijing bureau chief for the FT and has been a correspondent covering China since 2003.“China’s monster traffic jam: a sign of things to come”

<http://blogs.ft.com/beyond-brics/2010/08/23/chinas-monster-traffic-jam-a-sign-of-things-to-come/>

When economists predicted that the next stage of China’s development would see the fruits of growth spread to the interior, this isn’t what they had in mind. On Monday, **state media reported that a traffic jam stretching more than 100km on a major national expressway leading northwest from Beijing had entered its ninth day of virtual standstill**. Road works along the Beijing-Tibet Expressway have been exacerbated by traffic accidents and broken-down cars and **traffic has backed up from the outskirts of Beijing all the way into Inner Mongolia. Many of the vehicles stuck in the gridlock are trucks carrying coa**l and fruit. **While delayed delivery of goods shipments will have an adverse affect on China’s overall economy**, **for some residents living beside the congested stretch of highway the traffic has been a bonanza**.

## 2NR

#### Coal’s not sustainable

Boyd and Fletschaker 8 – James D. Boyd, vice-chair and commissioner of the West Governor’s Association, California Energy Commission, AND\* David Fletschaker, Oklahoma Secretary of Energy, February 2008, "Transportation Fuels for the Future," www.westgov.org/wga/publicat/TransFuels08.pdf-http://www.westgov.org/wga/publicat/TransFuels08.pdf

• Coal reserves data has not been updated since the 1970s, and a recent study by the National Research Council suggests that economically recoverable reserves may be lower than previously estimated. The report notes that the nation’s reserves will be sufficient through 2030, but that long-term reserves are less certain and need to be reevaluated. Consequently, it is uncertain whether there is sufficient coal for both fuel production and electricity generation

***The glut is self-correcting now***

**Wallace ‘12**

Christopher Wallace, Former private equity fund manager, now full time private investor.

7-17, Seeking Alpha, Natural Gas: Movements Into Storage Suggest Glut Will Soon Disappear <http://seekingalpha.com/article/725781-natural-gas-movements-into-storage-suggest-glut-will-soon-disappear?source=feed>, jj

**A serious glut of natural gas has appeared** in the North American market and has caused havoc with its price. Analyzing the data shows **those trends have begun to reverse and movements into storage indicate the glut will soon be removed**, **which should allow natural gas prices to rise to a level that restores profitability**, a substantial increase from present levels. How did the glut come into being? Natural gas drilling has gone through an amazing transformation during the last decade with the widespread adoption of two phenomena: hydraulic fracturing and horizontal drilling. Hydraulic fracturing, more commonly referred to as just "fracking" has actually been around since 1947 but first came to more widespread use in 1997 in the Barnett shale. Simply stated it is the process of injecting a pressurized fluid from a wellbore to fracture the rock formation into which it has been injected. This allows the hydrocarbons in the formation to travel up these fractures allowing for their easier extraction. This process has allowed for the extraction of natural gas from shale formations, which has introduced a vast source of newly recoverable natural gas from many regions in the southern and eastern parts of the USA. Horizontal drilling (sometimes referred to as slant drilling or directional drilling) has increased the productivity from wells so drilled as many reservoirs are more horizontal in nature. This technique increases the exposed section length through the reservoir by drilling it at an angle. Together these techniques effectively unlocked massive amounts of shale gas and helped create a significant increase in the natural gas rig count. From 1999 to 2009 the natural gas active rig count increased from roughly 500 to over 1600. Production exceeded consumption, significantly, gas became plentiful. During the winter of 2011/2012, weather was unusually mild causing less electricity to be used for heating. This reduced natural gas consumption contributing to a major glut of natural gas. How much of a glut is there? The glut was significant, about 60% above the 5 year average at the beginning of this injection season. Natural gas is stored (in underground structures) and there is a finite amount of gas that can be stored. That amount of maximum storage capacity is estimated to be about 4,200 billion cubic feet. Gas in storage is very much a function of peak and trough usage. There are times of the year when consumption exceeds production and inventories of gas in storage decline, "withdrawal season". This runs from November through March. From April through October, production exceeds consumption and inventories build through what is called "injection season". Many will be familiar with the following graph produced and updated by the EIA, showing the two seasons: As the graph depicts, this year we began injection season with inventories 60% above the 5 year average (2,437 bcf this year versus the 5 year average of 1,514 bcf). For the last 5 years, the average inventory build over the injection season has been 2,146 bcf. A normal injection season would take inventories above storage capacity, a prospect that could have a devastating effect on gas prices. Just a few months ago, pundits were calling for this to happen and for natural gas prices to approach zero. Injections are below normal this season, for two fundamental reasons **Natural gas inventories are building at a much slower rate this season.** The glut that was built caused natural gas prices to plummet from $14 to a low of $1.92 reached this April 19. The reduction in prices was so steep that it has brought gas to a level that is below most fields all-in cost of production. **When the economics are such that you are forced to sell below cost, production naturally curtails**. **The natural gas rig count has fallen dramatically** from a peak of over 1,600 to 522 as at July 13, as drilling new wells ceased to be profitable. The other factor at work here is the decline rate that all wells go through. Natural gas wells are most productive after they are initially drilled and then decline thereafter over their natural lifetime. Horizontally drilled wells are unique in that their decline rate is very steep after the first year, falling by about 70%. The growth in horizontal wells has contributed to an increased overall decline rate. **The injection and storage numbers show the glut being removed So far this season, injections are well behind the 5 year average**. The glut, which began this injection season at 60% above the 5 year average inventory level is now only 19% above the 5 year average inventory level. From week 12 to week 28 this year injections have totaled 766 bcf, compared to the 5 year average for that period of 1,087 bcf, a reduction of 30%. **If the trend continues** at 30% below the 5 year average, **storage at the end of injection season** (beginning November) **should be** at 3,761 bcf, only 80 bcf **above** the 5 year average. ***The glut will effectively be removed.*** But the story does not end here. The rate of injection relative to the 5 year average has been declining over the course of the injection season. I track the current year 4 week rolling average which has been declining steadily relative to the 5 year 4 week rolling average. Most recently the current year 4 week average is 43% below the 5 year 4 week average. If the rate of injections continues at that rate, this forecasts a season end inventory of 3,627 bcf, which is slightly below the 5 year average. What is the implication of this forecast? **A removal of the supply glut should elevate the price of natural gas to its full cycle cost of production plus a reasonable profit. We are seeing basic economics at work. Markets are in the long term pursuit of equilibrium**. **When supply and demand get out of balance, the price mechanism adjusts to restore equilibrium**. **Excessive supply brought prices down. Producers** will exhibit rational behavior in the long run, and they **will curtail production at prices that are below cost**. We should expect no significant deviation from this pattern of lower injections until equilibrium prices are achieved, meaning total costs plus reasonable profit. Different companies operating in different fields have different cost structures so it is difficult to make a general statement about industry-wide costs and therefore where prices will return to. However, from what I have read from a variety of sources, I think that costs plus a reasonable profit forecasts $5 - $6 natural gas. It likely won't be a steady rise to that point, but once the market accepts that the glut has been removed, prices should get there. The time frame for this to occur should be measured in months, not years.

#### \*\*He concedes 23 years left

Berman 12 (Art, Former Editor – Oil and Gas Journal, Geological Consultant – American Association of Petroleum Geologists, “After the Gold Rush: A Perspective on Future U.S. Natural Gas Supply and Price,” Oil Drum, 2-8-12, http://www.theoildrum.com/node/8914)

The Potential Gas Committee (PGC) is the standard for resource assessments because of the objectivity and credentials of its members, and its long and reliable history. In its biennial report released in April 2011, three categories of technically recoverable resources are identified: probable, possible and speculative. The President and many others have taken the PGC total of all three categories (2,170 trillion cubic feet (Tcf) of gas) and divided by 2010 annual consumption of 24 Tcf. This results in 90 and not 100 years of gas. Much of this total resource is in accumulations too small to be produced at any price, is inaccessible to drilling, or is too deep to recover economically. More relevant is the Committee’s probable mean resources value of 550 (Tcf) of gas (Exhibit 4). If half of this supply becomes a reserve (225 Tcf), the U.S. has approximately 11.5 years of potential future gas supply at present consumption rates. When proved reserves of 273 Tcf are included, there is an additional 11.5 years of supply for a total of almost 23 years. It is worth noting that proved reserves include proved undeveloped reserves which may or may not be produced depending on economics, so even 23 years of supply is tenuous. If consumption increases, this supply will be exhausted in less than 23 years. Revisions to this estimate will be made and there probably is more than 23 years but based on current information, 100 years of gas is not justified.