## Energy Advantage

### 1AC Coal Advantage

#### Inland waterways are the most efficient means of fuel transport, but deteriorating system puts that in jeopardy.

Buchsbaum 12, associate editor for Coal Age magazine, (Lee, 2/23/12 “LOCKED Out: Aging Locks and Dams Jeopardize Inland Waterways” <http://www.coalage.com/index.php/features/1766-locked-out-aging-locks-and-dams-jeopardize-inland-waterways.html>)

According to the Waterways Council, a Washington-based industry group, moving coal and other freight via barge through the nation’s river system is the most energy efficient mode of transportation. On average, barges move a ton of cargo 576 miles per 1 gallon of fuel. A rail car, by contrast, will move the same ton of cargo 413 miles per gallon. Trucks are the worst, averaging only 155 miles travel per that 1 gallon of fuel. One of the largest river shippers, American Electric Power (AEP) is able to do better: squeezing an average of over 642 miles traveled per gallon of fuel used. But in our increasingly carbon constrained and supposedly “greening” economy, America’s inland waterways are actually becoming less efficient and reliable. As Congress debates how much to fund the waterways through this winter, shippers wonder how the inevitable spring floods will affect them and their customers later this year.

#### Inland waterway transport is key to coal transportation.

Moran, 06-National Research Council. ("5 Transport of Coal and Coal Products." Coal: Research and Development to Support National Energy Policy. Washington, DC: The National Academies Press, 2007)

http://www.nap.edu/openbook.php?record\_id=11977&page=85

Transportation on the inland waterways and Great Lakes is an important element of the domestic coal distribution system, carrying approximately 20 percent of U.S. coal tonnage and making 10 percent of deliveries to end-use consumers. The amount of waterborne transported coal, approximately 306 million tons in 2004 (including imports and exports), has remained relatively constant over the last two decades. Coal represents a significant share of shipping on the inland waterways, accounting for approximately 20 percent of total cargo. Barge transportation rates on contract coal shipments are about one-half to two-thirds those of rail haulage on a ton-mile basis, and truck transportation rates are an order of magnitude higher than waterborne transportation rates (EIA, 2006h).

Barge traffic is particularly important in the midwestern and eastern states, with 80 percent of shipments originating in states along the Ohio River. This reflects the large number of coal mines and electricity generation facilities that have barge loading and unloading facilities along the Ohio River and its tributaries. Some coal exports from the United States to Canada also move across the Great Lakes. These exports have decreased in recent years, but lake traffic has remained approximately constant because of increased movement of Powder River Basin (PRB) coal shipped between U.S. ports. Like PRB coal, which is transloaded from rail to lake vessel or barge, much waterborne coal is transloaded before final delivery to the ultimate consumer. Although total domestic waterborne coal cargo is about 200 million tons, only about half of that coal (110 million tons) is finally delivered by water to its final customer (Table 5.1), principally to electricity generating facilities.

Maintenance of the critical infrastructure along the inland waterways and Great Lakes (i.e., locks and dams, dredging of ports) is the responsibility of the U.S. Army Corp of Engineers (USACE). USACE construction and rehabilitation projects are funded on a 50-50 cost-shared basis from appropriations and from the Inland Waterways Trust Fund, established in 1986, which derives its revenue from a 20-cent-per-gallon tax on fuel used for commercial waterway transportation. Between 1992 and 2001, congressional appropriations were less than Inland Waterways Trust Fund income and therefore the fund balance grew, a situation that began to be reversed in 2005 with greater administration requests and congressional appropriations. The USACE also spends about $500 million per year on operation and maintenance (O&M) of the waterway system, of which $135 million is spent in the Ohio River and Great Lakes Division.1 O&M expenditures for the total system have been essentially level (in constant dollars) since the 1970s, below levels that the industry believes are optimum for the aging system.

#### Lock Gate Failures will steadily and surely occur soon, making coal undesirable.

Buchsbaum 12, associate editor for Coal Age magazine citing Keith Darling, president of AEP’s River Operations, (Lee, 2/23/12 “LOCKED Out: Aging Locks and Dams Jeopardize Inland Waterways” <http://www.coalage.com/index.php/features/1766-locked-out-aging-locks-and-dams-jeopardize-inland-waterways.html>)

Over the next 20 years lock gate failures will continue steadily. “Lock gate failures will occur at increasing rates over the next couple decades. Indeed by the year 2020, the Corps predicts that all 40 lock gates on the Ohio will fail at some point in time. That’s the Corps’ prediction. And amazingly they’ve been about 100% at predicting lock failures,” Darling said. Those lock failures have major impacts to the traffic on the Ohio River. When a main chamber on the Ohio River fails, all traffic must use an auxiliary lock chamber instead. Generally the auxiliary chambers are only half the size of the main chambers, forcing barge lines to break tows in half and move a tow through in two or more pieces. “This adds time and it creates queues. Locks you typically drive up to and lock directly through, you’ll sit at for two, three, even four days while waiting for your turn to move through. And, time is money,” said Darling. The extra costs the shippers bear generally translate into higher costs per delivered ton and increased costs for ratepayers. All of this translates to higher costs for coal, which only prices it further out when compared to natural gas.

#### High coal prices from transportation costs promote switch away from coal to natural gas

Santa Maria and Noh 12, writers for Platts, an energy economics news and analysis provider (Samantha Santa Maria and Chang Noh, May 11 http://www.platts.com/newsfeature/2012/uspowergen/index

The trends that make region the prime target of gas producers and pipelines are set to continue, Platts analysis shows, and plans to increase gas supply through a host of new pipeline builds and expansions are likely warranted. (See related map: US Southeastern gas pipeline expansions) Compounding the expected demand uptick are wide gas vs. coal generation margins, with historically low-priced gas remaining far more profitable over coal plants that burn Central Appalachia (CAPP) coal, which dominate the generation space in the Southeast. Coal companies have been feeling the tremendous pinch of low gas prices for several months. Alpha Natural Resources president Paul Vining, in the company's first-quarter earnings call, related the current day-to-day dynamic. "Customer calls us, they want to defer 500,000 tons," he said. "We say 'No thanks, you need to take the coal.' Discussion ensues, trader comes along, buys the coal from them, puts it on some existing business they have overseas where they have taken a short, and they dispatch gas and everybody comes out ahead," Vining added. Regional gas still loses out to low-sulfur Powder River Basin coal-fired plants through 2015, but these are already a minimal presence in the region's generation mix in the region due to high transportation costs, despite the relatively low price between the fuel itself, Platts analysis indicated.

#### First impact is heg – loss of coal collapses the steel industry

**Steinmiller, of the Villanova Environmental Law Journal, 2K (Heather, “STEEL INDUSTRY WATCH OUT! THE KYOTO PROTOCOL IS LURKING,” Villanova Environmental Law Journal, 11 Vill. Envtl. L.J. 161)**

The production of steel relies heavily on fossil fuels like coal, natural gas, and petroleum to provide the necessary energy. n28 Coal [\*167] comprises sixty percent of the energy used to produce steel and it emits more carbon dioxide than the burning of other fossil fuels. n29 Coal is used: (1) in the coke process, (2) to provide heat in the production of pig iron, and (3) in coal-based power plants to generate electricity, which comprises another ten percent of the energy base. n30 Currently, there is no feasible alternative to the use of coal or coal-based fuels in steel production. n31 The complicated process of making steel begins with the production of coke. n32 Coke results from the burning of coal at very high temperatures in the absence of air. n33 After the coke is produced, it is placed in a blast furnace with limestone and iron ore to produce pig iron. n34 Coke is important because it contains the carbon [\*168] needed to convert iron-bearing materials to pig iron. n35 The resulting pig iron is a major component of steel because it contains over ninety percent iron. n36 Indeed, the production of pig iron accounts for two-thirds of the total energy used in the entire steel production process. n37 The pig iron is then placed in a steelmaking furnace to remove the excess carbon. n38 After the steel has attained the desired chemical composition, it is poured from the steelmaking furnace into a ladle from where the steel is either: (1) poured into molds, where it solidifies to form ingots, or (2) poured into a continuous casting machine. n39 Next, the solid steel is reheated and rolled into shapes. n40 Steel is rolled into one of three shapes: (1) blooms, (2) [\*169] billets, or (3) slabs. n41 Finally, through mechanical treatment, the blooms, billots, and slabs are produced into finished steel products, such as: bars, plates, structural shapes, rails, wire, tubular products, and coated and uncoated sheet steel. n42 2. The United States Steel Industry's Effective Response to Environmental Concerns Because of its reliance on fossil fuels, the steel industry has greatly contributed to the emission of greenhouse gases - specifically, carbon dioxide. n43 In response to various environmental concerns, the United States steel industry invested seven billion dollars in the past twenty years for production improvements. n44 This funding resulted in a twenty-eight percent emission reduction of carbon dioxide, ninety-one percent emission reduction of toxic wastewater, ninety-five percent recycling rate for water used in steelmaking, and forty-five percent increase in energy conservation. n45 As a result, the [\*170] quality of air in America's steelmaking cities improved dramatically. n46 The United States steel industry even joined forces with thirty-two other steel companies from fifteen nations to design the lightest possible steel car body with enhanced fuel efficiency. n47 Both domestically and internationally, the steel industry plans to continue these efforts to make the steelmaking process more environmentally friendly in an economically feasible way. n48 III. The Kyoto Protocol A. Events Preceding the Kyoto Conference The greenhouse effect and other environmental issues have recently become a global concern. n49 The United Nations General Assembly responded to these concerns by creating the Inter- [\*171] governmental Negotiating Change. n50 In 1992, this Committee created a treaty called the Framework Convention on Climate Change (Rio Treaty). n51 The Rio Treaty embodies three themes: "(1) emphasis on achieving reductions early enough 'to allow ecosystems to adapt naturally to changes in climate;' (2) emission reduction activities executed without endangering food production; and (3) efforts to stave off the adverse effects of climate change in harmony with established principles of sustainable economic development." n52 The Rio Treaty mandates developed countries voluntarily reduce their greenhouse gas emissions to the level present in 1990. n53 However, a country that fails to reduce its emission faces no [\*172] consequences because the Rio Treaty's emissions requirements are not binding. n54 Over 170 nations, including the United States, signed and ratified this treaty. n55 In 1995, the parties signatory to the Rio Treaty attended the first conference in Berlin. n56 Concerned that voluntary reduction provisions were too lenient to effectuate results, the parties decided to support mandatory reductions. n57 They enacted the Berlin Mandate that declared another meeting in December 1997, in Kyoto, Japan to negotiate mandatory reductions. n58 [\*173] B. The Kyoto Protocol's Regulations On December 10, 1997, the parties to the United Nations Framework Convention on Climate Change adopted the Protocol after ten days of difficult negotiations. n59 The Protocol's purpose is to "prevent dangerous interference with the climate system by limiting the emissions of greenhouse gases into the atmosphere." n60 The Protocol captured worldwide attention because it is the "first agreement that seeks to impose legally binding restrictions on the release of environmentally harmful GHG (greenhouse gas) emissions into the atmosphere." n61 Annex I parties include developing countries [\*174] and those countries that are in a transition to a market-based economy. n62 The countries must meet the mandatory reductions and show "demonstrable progress toward achieving their goals" between the years 2008 and 2012. n63 The Protocol establishes two different baselines for emissions reductions, and from these baselines, the Protocol establishes a percentage of overall gas emissions reductions (ranging between ninety-two and one hundred percent). n64 For carbon dioxide, methane, [\*175] and nitrous oxide, the base year is 1990. n65 For hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride, however, the country can choose either 1990 or 1995 as the baseline. n66 The Protocol permits countries with transitional economies to choose a different base year than 1990 for calculating emissions reductions. n67 [\*176] For all countries, the target reductions are applicable to the total greenhouse gas emissions - not specific reductions for specific gases. n68 The Protocol requires the United Sates to reduce emissions seven percent below its 1990 level. n69 In actuality, this seven percent reduction is quite extreme. In 1996, the United States was nine percent above its 1990 level and it is estimated the United States will be thirty-four percent above its 1990 level in 2010. n70 Therefore, what at first glance appears to be a seven percent reduction may actually be a forty-one percent reduction. n71 Such a mandate is unprecedented. n72 [\*177] 2. Developing Countries Exempt from Mandatory Reductions Some developing countries, such as China, India, Mexico, and Brazil, are exempt from the Protocol's mandates. n73 Although the Protocol does not subject them to specific requirements, it does require them to be committed to attempting to achieve sustainable development, and it allows them to participate in the clean development mechanism. n74 In a campaign to solicit participation in emissions reductions from these otherwise exempt countries, the United States administration posits that developed countries may voluntarily bind themselves to emissions reductions by amending the Protocol. n75 Under such an assumption, the United States is campaigning for developing countries' participation. n76 The benefit of acquiring this participation is that these countries could then participate in the emissions trading program, which allows Annex I countries to purchase emissions budgets from each other. n77 However, the voluntary commitment of developing countries is unlikely for two reasons. First, voluntary commitment is not legally binding. n78 Article 3 of the Protocol states that emission-reduction [\*178] commitments bind only Annex I countries. n79 Because a developing country is not an Annex I country, any commitments it makes are not binding under Article 3. n80 The amendment to the Protocol, therefore, is only a mere gesture toward procuring voluntary participation. n81 Second, the parties are foreclosed from amending the Protocol because it is considered a final agreement. n82 Therefore, the parties to the Protocol may not amend it until after it enters into force. n83 The Protocol is unlikely, however, ever to enter into force because the United States Senate refuses to ratify the agreement without a mandatory reduction provision for developing countries. n84 Therefore, the problem is circular: the parties cannot amend the Protocol until it enters into force, yet the Protocol cannot enter into force without the amendment. Therefore, developing countries' participation will have to be accomplished through negotiations of a supplemental agreement. n85 These negotiations are unlikely because China and other developing countries oppose even voluntary commitments. n86 [\*179] 3. Flexibility Mechanisms in the Protocol Included in the Protocol is a number of mechanisms to ensure attainment of emission-reduction obligations in the most cost effective way. n87 One such mechanism is the allowance of emissions trading among the countries. n88 Article 6 of the Protocol permits "developed nations to either transfer to or acquire from any other participating developed nation excess greenhouse gas emission units." n89 The emissions trading program permits Annex I countries to purchase an emissions budget of another Annex I country where it would be cheaper than undertaking the reduction in one's own country. n90 Another mechanism that permits countries to reduce [\*180] their emissions without doing so internally is the joint implementation program. n91 The joint implementation program permits a country to earn reduction credits when it works on certain projects to reduce emissions in other developed countries. n92 To earn reductions, a project must (1) have approval of the parties involved and (2) provide "a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur." n93 A third mechanism is the clean development mechanism. n94 This mechanism is similar to the joint implementation program, but under the clean development mechanism, a developed country undertakes an emissions reduction program in a developing country and a responsibility to meet additional requirements in order to qualify for the earning of reduction credits. n95 Finally, the Protocol provides for the use of sinks to offset emissions. n96 [\*181] A sink is something that captures carbon dioxide from the air and then stores it for a sustained period of time. n97 Countries get credit for the use of sinks only in afforestation, reforestation, and deforestation activities. n98 C. The Ratification Debate Within the United States 1. When the Protocol will Enter Into Force The Protocol will enter into force ninety days after the fifty-fifth nation signs and ratifies it. n99 The fifty-five nations that ratify the Protocol, however, must include enough Annex I Parties to represent fifty-five percent of the total carbon dioxide emissions for 1990. n100 Therefore, the larger Annex I countries must ratify the Protocol in order for it to enter into force. n101 Some say the United [\*182] States must sign and ratify the agreement because it is the largest emitter of carbon dioxide. n102 Each country has a different process for signature and ratification. n103 The United States follows the process found in Article II of the United States Constitution, which states that the President "shall have Power, by and with the advice and consent of the Senate, to make Treatises, provided that two-thirds of the Senators Present concur." n104 President William Clinton completed the first step of the process by signing the Protocol on November 12, 1998. n105 To complete the second step, two-thirds of the Senate [\*183] must ratify the Protocol. n106 However, it is unlikely that the Senate will ratify it in its present form because it fails to meet the requirements of the Byrd-Hagel Resolution. n107 Due to the unlikeliness of [\*184] ratification in the United States, the enforcement date for the Protocol is likely to be postponed. n108 2. The Byrd-Hagel Resolution and Its Effect on the Ratification Debate The Byrd-Hagel Resolution requires that "(1) the treaty legally binds developing nations to reduction target within the same compliance period as developed nations and (2) the treaty will cause no serious harm to the U.S. economy." n109 In its current form, the Protocol fails to meet either requirement. n110 The first prong of the Byrd-Hagel resolution requires "meaningful participation" from the developing nations. n111 Because the Protocol does not legally bind developing countries to mandatory reduction, the Clinton Administration solicits developing countries to participate voluntarily in the Protocol's requirements. n112 Within this voluntary context, the participation level needed to satisfy the "meaningful participation" prong is uncertain. n113 Of course, [\*185] whether voluntary commitments amount to "meaningful participation" is a moot issue altogether if the voluntary commitments are not legally binding in the first place. n114 The second prong requires the Protocol to pose no serious economic harm to the United States. n115 The Protocol fails this prong because of the devastating effect it will have on the United States economy. n116 Many economists estimate that implementation of the Protocol will cause: (1) the U.S. gross domestic product to decrease by $ 200 billion; (2) a 2.4 million reduction in available jobs; (3) a thirty to forty percent increase in the cost of domestic electricity and heating; (4) a sixty-cent increase in the cost of gasoline; (5) an increase in the cost of food, paper, steel, chemicals, aluminum, cement and petroleum products, and all other products that are produced with the use of energy; and (6) a $ 2,000 to $ 4,000 per year increase in energy costs for the average family. n117 They also predict that revenue from state taxes will decrease by $ 93.1 billion due to job and output losses attributable to lost United States competitiveness in the global market and higher energy costs. n118 The Clinton Administration disputes this forecast and claims that the economic costs of the Protocol will be modest. n119 The Clinton [\*186] Administration's Report, and other similar reports, state that the United States can reach its mandated reduction "with the flexibility mechanisms included in the treaty, and by pursuing sound domestic policies." n120 The President's Report estimates that emissions can be reduced twenty-six percent through current climate mitigation programs. n121 In order to meet the rest of the reduction, the President's Report relies heavily on emissions trading, joint implementation, the clean development mechanism, and the use of sinks. n122 Because the rules and procedures associated with the mitigation programs are not yet decided, it is difficult to estimate the economic impact accurately. n123 Due to these uncertainties, it is unlikely that the Senate will ratify the Protocol. n124 Because Senate ratification is unlikely, many fear that the Clinton Administration will attempt to implement the regulations through the "back door." n125 In response to this fear, Congress [\*187] passed bills prohibiting the use of federal funds to implement the Protocol. n126 [\*188] D. Events Subsequent to the Enactment of the Protocol 1. Unresolved Issues of the Protocol The parties to the Kyoto Conference left open some key issues for later discussion. n127 The Protocol contains no rules or procedures for its implementation. n128 Although the Protocol permits emissions trading, it fails to provide guidelines, methods of verification or reporting mechanisms for the trading program. n129 Furthermore, the Protocol does not stipulate a mechanism for determining whether the program meets the criteria. n130 Due to scientific uncertainties and the vagueness of the Protocol, it is also unclear how accurately "sinks" can count toward emissions reductions goals. n131 The Protocol also contains no regulations for its enforcement. n132 The Protocol, however, does establish a review procedure for monitoring compliance. n133 Under the Protocol's review procedure, [\*189] each country has a system that estimates man-made emissions of greenhouse gases, and there is an international team that reviews compliance. n134 In addition to this international monitoring, the United States plans to place specific caps on emissions from various industries and companies. n135 Although the Protocol provides a method of monitoring compliance, it does not specify penalties. n136 According to some commentators, possible penalties a country could face are: (1) exclusion from flexible mechanisms, such as emissions trading or (2) an imposition of sanctions. n137 Resolution of these issues will affect a country's decision to sign and ratify the agreement, thus determining the fate of the Protocol. n138 2. International Environmental Conferences Subsequent to the Protocol In Buenos Aires, in November 1998, the parties to the Protocol attended a fourth conference to begin resolving the issues that remained open after the conference in Kyoto, Japan. n139 At this conference, the parties addressed many concerns regarding the implementation of the Protocol. n140 However, none of the issues were resolved. n141 The parties did set a two-year deadline to adopt rules for enforcing the Protocol's terms. n142 These rules are to include: [\*190] mechanisms to prevent parties from cheating, and the imposition of strict penalties upon nations that do not meet their obligations. n143 Furthermore, the parties set guidelines for market-based mechanisms to make compliance with regulations more cost-effective. n144 Despite the lack of accomplishments, the conference was not uneventful. n145 During the second week of the conference, the United States and Argentina took center stage. n146 Argentina, a developing country, broke away from the pact and agreed to undertake voluntary commitments. n147 This event is noteworthy because it may have cleared the path for other countries to commit to voluntary emissions reductions. n148 If enough countries commit voluntarily to reduce their emissions, the "meaningful participation" prong of the Byrd-Hagel resolution could be satisfied. n149 The day after Argentina's announcement, the United States signed the Protocol in an attempt to illustrate its firm commitment to making the Protocol agreement work. n150 3. The Protocol Does Not Accomplish Its Purpose If implemented, the Protocol will not result in worldwide reduction of energy-related emissions. n151 Recently, developing countries began taking the lead in emitting greenhouse gases. n152 This lead will continue because industries will move to developing countries [\*191] to avoid the Protocol's mandated emissions reductions. n153 The relocation will allow the industry to avoid limitations on emissions, thus allowing it to emit more gases. n154 The increase of emissions in those developing countries - the new homes of relocated industrial companies - will hinder the international efforts to combat the greenhouse effect. n155 IV. The Protocol's Effect on the Steel Industry The Protocol negatively affects the United States steel industry in two ways: (1) the mandatory reductions make the current coke process economically infeasible and (2) the increase in the cost of energy makes the price of steel rise. n156 These effects economically disadvantage the United States steel industry while benefitting rival steel companies in developing nations, such as China, India, Brazil, and South Korea, because these rival steel companies are not bound to the mandatory regulations of the Protocol. n157 As a consequence of this disadvantage in the international market place, steel production will shift to developing nations. n158 As more production shifts, the more American steel plants will close down and the more jobs will be lost. n159 The Protocol will also cause the steel industry's independent efforts to decrease pollution and invest in energy-saving [\*192] technology to screech to a halt. n160 The United States steel industry will unjustly take a stronger beating from the Protocol than most other countries. n161 This result is inherently unfair. A. The Protocol's Effect on the Coke Process The coke process includes the burning of coal which produces more carbon dioxide than any other fossil fuel. n162 Coke ovens in the United States have become increasingly more environmentally sound since their invention. n163 These ovens, however, will not meet the Protocol's mandated reductions. n164 In order to satisfy the Protocol, the coke ovens must be equipped with a "filtering process" to eliminate particles from entering into the environment. n165 Improving the filtering process is difficult because it is not technologically possible and, even if it is technologically possible, it is not cost-effective. n166 It is economically infeasible for the steel industry to add such a filtering process because the coke ovens have evolved to a point where new technology would be costly. n167 If the steel industry cannot meet these regulations, it will be penalized either through fines or through verdicts against it in civil suits. n168 Due to its inability to comply with the mandatory regulations, the steel industry's coke process will be shut down. n169 The steel industry's termination of the coke process will devastate the industry in the United States. n170 The coal industry mines [\*193] coal for two purposes: (1) the production of coke and (2) the production of electricity. n171 If the steel industry no longer produces coke, the coal industry will lose the majority of its business. n172 An alternative to the coke process in the production of steel is the use of scrap metal in mini-mills. n173 Mini-mills, however, do not provide an adequate substitute because: (1) mini-mills have a lower output rate of steel per year; (2) there is a limited amount of scrap metal, an essential ingredient for mini-mills; and (3) mini-mills can produce only limited finished products. n174 For example, mini-mills cannot produce steel for the production of structural members such as i-beams. n175 Since the production of steel requires coke, United States steel companies will have to import coke from other countries. n176 The importation of coke will increase steel production costs and place its foreign competitors even further ahead in the global market place. n177 B. The Protocol's Effect on the Cost of Energy In addition to the effects the Protocol has on the coke process, the Protocol further impacts the steel process because it increases the cost of energy. n178 Under the Protocol, energy prices could rise in two possible ways: (1) in an attempt to decrease the amount of fossil fuels used, the government could place mandatory caps on fossil fuel usage or (2) in order to limit consumption, the government [\*194] could place a tax on fuels which would inevitably cause the price of fuels to rise. n179 The rise in the cost of energy dramatically affects the steel industry because the steel industry is an "energy-intensive" industry. n180 An "energy-intensive" industry produces a low-cost product at a high-cost of energy. n181 In the manufacturing of steel, the cost of energy comprises fifteen to twenty percent of the total cost of production. n182 This is considered high because the average energy cost for manufacturing a product is three to five percent. n183 Due to the high component of energy in the manufacturing of steel, the Protocol's effect on energy prices will substantially increase the total cost of producing steel in the United States. n184 If energy prices were to double, the steel industry would suffer a five billion dollar increase in one year. n185 This increase in the cost of production would shift thirty percent of the manufacturing of steel to developing countries - countries the Protocol leaves unscathed. n186 This shift of production would result in the loss of 100,000 United States steelmaking jobs. n187 The economic effect on the steel industry does not stop there. n188 It also affects consumer products that rely on steel, such as automobiles and appliances. n189 Because increased costs of production are normally allocated to the consumer, consumers [\*195] would expect to pay more for products with steel components. n190 V. Conclusion The parties to the Protocol must determine the rules and procedures for emissions trading, credits for technology transfers, methodologies for accounting for the role of carbon sinks, and compliance with enforcement. n191 Without resolution of these issues, it is impossible to assess accurately the economic impact the Protocol will have on the United States steel industry. n192 Until the economic impact can be accurately assessed, the United States should not bind American steel companies to such regulations. n193 Furthermore, developing countries must be signatories to mandatory reductions to prevent the Protocol from devastating the United States steel industry. n194 Without mandatory regulations applied equally across the board, the United States steel industry will lose its competitive edge in the market place. n195 The production of steel will shift to other countries where it is cheaper to produce. n196 "Simply put, if the treaty is not global, it won't work." n197

#### Steel key to hegemony

**Buyer, Member of the House of Representatives, 7-31-7 (Steve, Before the International Trade Commission, Regarding the five-year sunset review on Certain Hot-Rolled Carbon Steel Flat Products from Argentina, China, India, Indonesia, Kazakhstan, Netherlands, Romania, South Africa, Taiwan, Thailand, and Ukraine (Inv. Nos. 701-TA-404-408 and 731-TA-898-908))**

A robust steel industry is fundamental to the security and economic viability of this nation. If you were to contemplate the ten resources considered essential to the successful establishment of a nation, steel would be high on that list. A fruitful domestic steel industry maintains its viability by being adaptive, technologically savvy, and flexible so that it can maintain its competitive edge in the world market. That competitive edge lends itself to economic security and stability here at home. Both of those elements are vital ingredients to a nation's ability to develop and maintain an adequate defense. I believe we must remain vigilant to protect ourselves from a future without a steelmaking infrastructure sufficient to meet our national defense needs. In the years that have followed the tragic events of September 11, 2001, national defense has dominated public attention. When contemplating the tumultuous nature of this global war against terror in which we are immersed, I think it is apparent that we cannot accept a situation in which we are reliant on the kindness of strangers to meet our security-related steel needs. Depending on trusted friends and allies may not be wise, since they have requirements of their own for steel. Simply put, the defense of our nation depends on steel. Our aircraft carriers, cruisers, tanks, HUMMVEES, are all made of steel. We cannot become dependent on foreign sources for this material so vital to our national defense. The United States is the only superpower in the world. We cannot project our force around the globe, which from time to time is necessary, without the ability to move people and equipment quickly. It is in our national interest to maintain a vigorous steel industry. The economic stability of the steel industry here at home, and our ability to remain competitive abroad, directly impacts our national security. The efficient low-cost producers that comprise the membership of our domestic steel market can compete effectively against any foreign producer in the global economy. To ensure their stature, the steel industry has invested billions of dollars in modernizing itself while simultaneously improving environmental compliance. It has learned the hard way the benefit of cutting-edge technology. These producers are heavily concentrated in northwest Indiana and at the end of 2006 they employed over 19,000 Americans in that region. Companies like Nucor of Crawfordsville and Steel Dynamics of Pittsboro contribute substantially to the ensuring a healthy local economy and thereby contribute to a stable and healthy national economy. The nation's annual production of over 100 million tons of steel, of which Indiana is the second-largest producer among the states, keeps this country at the top of the worldwide steel industry. However, if the competitive nature of this market is unfairly influenced by steel dumping or by illegal subsidies given to foreign producers by their governments or other entities, the integrity of the domestic and global market is jeopardized. In those instances, the domestic market loses its ability to effectively compete with its global rivals. When that occurs, it negatively impacts the economic stability of our domestic steel industry which in turn threatens our national security. We need to ensure that companies like Nucor and Steel Dynamics have the opportunity to modernize and grow to adequately meet the demands of the global market without the fear of sustaining financial damage from unfair or illegal trade practices. To ensure that our nation's defense remains adequate and capable, we must continue to enable mechanisms that will influence other countries to play by the rules. Simultaneously, we must be cognizant, and take appropriate action, to recognize those instances in which anti-dumping and countervailing duties are no longer required to safeguard our economic and security interests. In either instance, we cannot allow to go unchallenged the continuous violations of international and U.S. trade laws that lend to a skewed market and undercut the ability for fair competition to flourish in the global economy. The preservation of the economic integrity of our domestic steel industry is fundamental to our ability to protect our very existence as a nation. Please take this under consideration while contemplating your decision in this matter - a vital instrument of our national security lies in your hands.

#### Hegemony stops great power wars and creates global stability

Kagan, Senior Fellow at Brookings, 3-14-’12 (Robert, “America has made the world freer, safer and wealthier” CNN, http://us.cnn.com/2012/03/14/opinion/kagan-world-america-made/index.html?hpt=hp\_c1)

We take a lot for granted about the way the world looks today -- the widespread freedom, the unprecedented global prosperity (even despite the current economic crisis), and the absence of war among great powers. In 1941 there were only a dozen democracies in the world. Today there are more than 100. For four centuries prior to 1950, global GDP rose by less than 1 percent a year. Since 1950 it has risen by an average of 4 percent a year, and billions of people have been lifted out of poverty. The first half of the 20th century saw the two most destructive wars in the history of mankind, and in prior centuries war among great powers was almost constant. But for the past 60 years no great powers have gone to war. This is the world America made when it assumed global leadership after World War II. Would this world order survive if America declined as a great power? Some American intellectuals insist that a "Post-American" world need not look very different from the American world and that all we need to do is "manage" American decline. But that is wishful thinking. If the balance of power shifts in the direction of other powers, the world order will inevitably change to suit their interests and preferences. Take the issue of democracy. For several decades, the balance of power in the world has favored democratic governments. In a genuinely post-American world, the balance would shift toward the great power autocracies. Both China and Russia already protect dictators like Syria's Bashar al-Assad. If they gain greater relative influence in the future, we will see fewer democratic transitions and more autocrats hanging on to power. What about the free market, free trade economic order? People assume China and other rising powers that have benefited so much from the present system would have a stake in preserving it. They wouldn't kill the goose that lays the golden eggs. But China's form of capitalism is heavily dominated by the state, with the ultimate goal being preservation of the ruling party. Although the Chinese have been beneficiaries of an open international economic order, they could end up undermining it simply because, as an autocratic society, their priority is to preserve the state's control of wealth and the power it brings. They might kill the goose because they can't figure out how to keep both it and themselves alive. Finally, what about the long peace that has held among the great powers for the better part of six decades? Many people imagine that American predominance will be replaced by some kind of multipolar harmony. But multipolar systems have historically been neither stable nor peaceful. War among the great powers was a common, if not constant, occurrence in the long periods of multipolarity in the 16th, 17th, and 18th centuries. The 19th century was notable for two stretches of great-power peace of roughly four decades each, punctuated, however, by major wars among great powers and culminating in World War I, the most destructive and deadly war mankind had known up to that point. The era of American predominance has shown that there is no better recipe for great-power peace than certainty about who holds the upper hand. Many people view the present international order as the inevitable result of human progress, a combination of advancing science and technology, an increasingly global economy, strengthening international institutions, evolving "norms" of international behavior, and the gradual but inevitable triumph of liberal democracy over other forms of government -- forces of change that transcend the actions of men and nations. But there was nothing inevitable about the world that was created after World War II. International order is not an evolution; it is an imposition. It is the domination of one vision over others -- in America's case, the domination of liberal free market principles of economics, democratic principles of politics, and a peaceful international system that supports these, over other visions that other nations and peoples may have. The present order will last only as long as those who favor it and benefit from it retain the will and capacity to defend it. If and when American power declines, the institutions and norms American power has supported will decline, too. Or they may collapse altogether as we transition into another kind of world order, or into disorder. We may discover then that the United States was essential to keeping the present world order together and that the alternative to American power was not peace and harmony but chaos and catastrophe -- which was what the world looked like right before the American order came into being.

#### Switch to natural gas hurts environment and causes water contamination via methane leaks

Ariel Schwartz 10, Senior Editor of Co.Exist and assistant editor of FastBusiness magazine, online site focusing on resource management and use (Schwartz has has contributed to SF Weekly, Popular Science, Inhabitat, Greenbiz, NBC Bay Area, GOOD Magazine. 9/2/10, “The Downside of Clean Natural Gas: Contaminated Water” <http://www.fastcompany.com/1686473/the-downside-of-natural-gas-contaminated-water>)

Test results from the EPA are pretty ugly: oil compounds were found in 89% of all drinking wells that were tested in the area, methane was found in 7 wells (out of 23) and 2-butoxyethanol phosphate (a fire retardant and plasticizer) was found in 11 of the wells. The EPA claims that it doesn't know the cause of the contamination, but EnCana, the oil and gas company responsible for most of the wells in the area, says it will pay for the cost of residents' drinking water--even though it won't admit to having anything to do with the contamination. This is, of course, something that could happen at any drilling site. But it's a sobering reminder that natural gas is not a sustainable source of energy, and it can be dangerous, to boot.

#### Extinction

Ryskin ‘3 (Gregory Ryskin, Department of Chemical Engineering, Northwestern University, “Methane-driven oceanic eruptions and mass extinctions,” Geology, 31(9), September 2003, http://pangea.stanford.edu/research/Oceans/GES205/methaneGeology.pdf)

In spite of the low solubility of methane in seawater, the total possible increase in the buoyancy of the parcel can be large. Consider a parcel that started its rise at 4 km depth, where solubility of methane is ;4.3 3 1023 . Then, if the parcel had a volume of 18 cm3 (1 mol of water) and was saturated with methane, it contained 4.3 3 1023 mol of dissolved methane. By the time this parcel has risen to the surface, essentially all the methane in the parcel has exsolved (solubility is ;2 3 1025 at the surface). At the surface conditions (T ø 25 8C, P 5 1 bar), 1 mol of any gas occupies 25 3 10 3 cm3 , so the total volume of methane in the parcel is ;108 cm3 , and the volume of the parcel, which now contains a mist of water droplets in gaseous methane, is 126 cm3 . That is, the volume of the parcel has increased by a factor of seven. Concurrent exsolution of other dissolved gases (e.g., carbon dioxide CO2 , hydrogen sulﬁde H2 S) will add to the effect. A rather similar process is responsible for the most violent, explosive volcanic eruptions (called Plinian), such as eruptions of Mount Vesuvius in A.D. 79 or Mount St. Helens in 1980. These eruptions are driven by exsolution of gases (primarily water vapor) dissolved in the liquid magma. In Lake Nyos (Cameroon), CO2 of magmatic origin enters the water column from the bottom, at a depth of ;200 m. In 1986, the lake erupted, creating a gas-water fountain ;120 m in height (Zhang, 1996), and releasing a lethal cloud of CO2 . A water surge washed up the shore to a height of ;25 m. The eruption continued for several hours (Kling et al., 1987). OCEANIC ERUPTION AS A CAUSE OF MASS EXTINCTION The consequences of a methane-driven oceanic eruption for marine and terrestrial life are likely to be catastrophic. Figuratively speaking, the erupting region ‘‘boils over,’’ ejecting a large amount of methane and other gases (e.g., CO2 , H2 S) into the atmosphere, and ﬂooding large areas of land. Whereas pure methane is lighter than air, methane loaded with water droplets is much heavier, and thus spreads over the land, mixing with air in the process (and losing water as rain). The airmethane mixture is explosive at methane concentrations between 5% and 15%; as such mixtures form in different locations near the ground and are ignited by lightning, explosions 2 and conﬂagrations destroy most of the terrestrial life, and also produce great amounts of smoke and of carbon dioxide. Firestorms carry smoke and dust into the upper atmosphere, where they may remain for several years (Turco et al., 1991); the resulting darkness and global cooling may provide an additional kill mechanism. Conversely, carbon dioxide and the remaining methane create the greenhouse effect, which may lead to global warming. The outcome of the competition between the cooling and the warming tendencies is difﬁcult to predict (Turco et al., 1991; Pierrehumbert, 2002). Upon release of a signiﬁcant portion of the dissolved methane, the ocean settles down, and the entire sequence of events (i.e., development of anoxia, accumulation of dissolved methane, the metastable state, eruption) begins anew. No external cause is required to bring about a methane-driven eruption—its mechanism is self-contained, and implies that eruptions are likely to occur repeatedly at the same location. Because methane is isotopically light, its fast release must result in a negative carbon isotope excursion in the geological record. Knowing the magnitude of the excursion, one can estimate the amount of methane that could have produced it. Such calculations (prompted by the methane-hydrate-dissociation model, but equally applicable here) have been performed for several global events in the geological record; the results range from ;10 18 to 10 19 g of released methane (e.g., Katz et al., 1999; Kennedy et al., 2001; de Wit et al., 2002). These are very large amounts: the total carbon content of today’s terrestrial biomass is ;2 3 10 18 g. Nevertheless, relatively small regions of the deep ocean could contain such amounts of dissolved methane; e.g., the Black Sea alone (volume ;0.4 3 1023 of the ocean total; maximum depth only 2.2 km) could hold, at saturation, ;0.5 3 10 18 g. A similar region of the deep ocean could contain much more (the amount grows quadratically with depth 3 ). Released in a geological instant (weeks, perhaps), 10 18 to 10 19 g of methane could destroy the terrestrial life almost entirely. Combustion and explosion of 0.75 3 10 19 g of methane would liberate energy equivalent to 10 8 Mt of TNT, ;10,000 times greater than the world’s stockpile of nuclear weapons, implicated in the nuclearwinter scenario (Turco et al., 1991).

### Energy Security Internal Link

#### Barge transportation will boost energy security --- uses 10 times less fuel than other forms of transportation

Ebke, 11 --- Chairman, Production and Stewardship Action Team, National Corn Growers Association (9/21/2011, Steve, Congressional Documents and Publications, “House Transportation and Infrastructure Subcommittee on Water Resources and Environment Hearing - "The Economic Importance and Financial Challenges of Recapitalizing the Nation's Inland Waterways Transportation System," Factiva, JMP)

As the most fuel efficient means of transportation for agricultural commodities, an investment in our waterways infrastructure will help us toward our national goals of energy security and improving our environmental footprint. Barges operate at 10 percent of the cost of trucks and 40 percent of the cost of trains, while releasing twenty times less nitrous oxide, nine times less carbon monoxide, seven times less hydrocarbons, and burning ten times less high-price fuel.

#### High probability of an accident that will follow with severe impact to energy prices.

Buchsbaum 12, associate editor for Coal Age magazine, (Lee, 2/23/12 “LOCKED Out: Aging Locks and Dams Jeopardize Inland Waterways” <http://www.coalage.com/index.php/features/1766-locked-out-aging-locks-and-dams-jeopardize-inland-waterways.html>)

Too much hyperbole? Perhaps. But Darling and AEP believe that even today, one key installation failure could have tremendous repercussions. In his presentation, Darling discussed the ramifications of a hypothetical lock failure at the Belleville lock and dam, located at milepost 203.9 on the Ohio River. A team at AEP studied what the system-wide ramifications would be if a gate failure occurred at Belleville, essentially in middle of the Ohio River system. Belleville is one of six dams (out of 40) that has earned a “D” condition rating by the Corps. It is expected to fail sometime between today and 2015—along with four others. When, not if, Belleville fails, roughly 16.5 million tons of throughput could be affected, causing a displacement of well more than 1.3 million tons. That failure alone could “add about 6.8 cents per kilowatt-hour to the average customer. And the average customer uses about 100 kilowatts per day. Though $6.80 per day doesn’t sound like a lot, in a month that’s about $204 more that every electric utility customer of AEP would have to pay. And AEP is only one of many utilities along the Ohio River,” said Darling.

### Coal Internal Link

#### Inland waterways are carry the bulk of all coal shipped to power plants.

Army Corps of Engineers on the Navigation Economic Technologies Program November 1, 2005 (”AN OVERVIEW OF THE U.S. INLAND WATERWAY SYSTEM” http://www.corpsnets.us/docs/other/05-NETS-R-12.pdf)

As mentioned earlier, coal is the primary commodity hauled, encapsulating over half of all barge traffic. Utility companies are the principal recipients of these coal shipments, with 49 power plants located within the Basin and 12 others residing within neighboring states, also connected via waterways. Specifically, in 1999 power plants utilized 120 of the 151 million tons shipped within the Basin’s waters, which encapsulated 79% of all coal shipped. The reason for this is twofold. First, coal is offered in abundance from within the region in high, low and medium sulfur contents. Second, the large river system encourages power plants to agglomerate nearby since they can utilize the waterway for two purposes: in-plant water needs as well as an efficient mode for receiving coal, a primary input for utilities.

### Economy Impact

#### Coal key to US economy

Targeted News Service, ‘8 (“NMA Comments on Senator Obama’s Coal Policy” lexis)

National Mining Association (NMA) President and CEO Hal Quinn today responded to comments Senator Obama reportedly made in a January 17 interview with the San Francisco Chronicle. In response to a question, the senator said his climate change policy would "bankrupt" U.S. coal: "Bankrupting the coal industry would be tantamount to bankrupting the American economy. Coal generates half of our nation's electricity, employs hundreds of thousands of Americans and provides millions of dollars in revenue to coal states. "Destroying the coal industry would break America's energy backbone. It would raise the cost of energy for households and businesses throughout the country and create massive job losses. We trust the candidates understand this and do not believe that destroying the coal industry is part of the change we need."

#### Coal is key to the economy

National Coal Council 93 (February, “THE ROLE OF U.S. COAL IN ENERGY, ECONOMY AND THE ENVIRONMENT” <http://www.nationalcoalcouncil.org/Documents/THE%20ROLE%20OF%20U>. S.%20COAL%20IN%20ENERGY,%20ECONOMY.PDF)

The economic well-being of the United States depends substantially on coal, primarily in the form of electricity. Coal has been the nation’s largest domestic source of energy for nearly a decade. Electric power, the largest and fastest growing end-use sector in energy, is the primary market for coal. Accounting for 56% of total generation, low-cost coal contributed to the electrification of the economy over the past twenty years. If coal had not been available to meet the growth in electric demand, consumers would have incurred over $190 billion in additional fuel costs since 1971. Coal contributes over $80 billion annually to the economy and stimulates over one million jobs. Coal also contributes to the economy in terms of tax revenue, exports, and infrastructure and technology development. Further development of coal production, combustion, and emissions technologies can ensure that coal continues to contribute to energy security, economic growth, and environmental protection

#### We heavily rely on coal because of its cheapness.

Cameron 06, writer for BBC News (Rob, 8/29/06, “Coal keeps US economy burning” http://news.bbc.co.uk/2/hi/5295922.stm)

More than half of the country's electricity is produced by burning coal, and as demand for energy increases, so does the pressure on those who supply it. Mention to the average American that you're going to Wyoming, and they are as likely as anything to ask you why. It is a fair question. Wyoming consists mostly of scrubby grassland or arid, tan-coloured mountains, and with just 500,000 people, it is the least populous state in the US. But the people of America should be thankful to Wyoming, because its colossal treasure trove of natural resources is helping - literally - to power the US economy. Mineral rich Wyoming's minerals include crude oil, natural gas, uranium, methane and something called trona. It all boils down to what's cheap and reliable - coal is very cheap Congressman Lee Terry, Omaha Don't worry if you haven't heard of it - few have. Trona is used in the manufacture of glass, and Wyoming has more of the stuff than anywhere else in the world. But most of all, Wyoming has coal. Huge, thick, multi-layered seams of coal lie just a few metres below the surface. Most of it lies in the Powder River Coal Basin, that spans the border with Montana. And the Powder River Basin is providing America with a staggering one million tonnes of coal each day - about a quarter of all US coal production. "It all boils down to what's cheap and reliable," says Lee Terry, Republican congressman for the town of Omaha, in neighbouring Nebraska. "That reliability means cost. Coal is very cheap, and so you're going to see a continued reliance." Power shortages Wyoming's mineral-rich landscape is anything but empty Cheap it is, no doubt about that. Cheaper than natural gas, which is why coal is used to generate 52% of America's electricity. It is also plentiful. The United States contains the largest coal reserves in the world, enough to last for 250 years or more.

### Oil Dependence Bad Impact

#### **Oil dependency threatens hegemony.**

USHSR 12, the United States High Speed Rail association (“Energy Security” http://www.ushsr.com/benefits/energysecurity.html)

In addition to being ever more expensive, oil will be more and more difficult to obtain in the huge quantities we use daily in America. Drilling for oil off our coasts and throughout the nation's pristine wilderness areas will not solve this because together these can only produce a tiny percent of the 20 million barrels we use daily. Even with this expanded domestic drilling we would still be importing more and more oil from foreign nations each day. The events unfolding across the Middle East demonstrate how unstable the entire region is surrounding the world's remaining oil supplies, and how easily it can spiral out of control. The fact that the daily operation of America is dependent on the continuous supply of oil from this region is a wake-up call to Americans. Our oil dependency is a matter of national security.

### A2: Coal Bad – Climate Change

#### Steel is critical to renewable energy production – Coal is key

**WCI 7 (World Coal Institute, “Coal & Steel” August, http://www.worldcoal.org/assets\_cm/files/PDF/coal\_steel\_final.pdf)**

Global steel production is reliant on coal. Coal is a direct input in the production of steel – almost 70% of the steel produced today uses coal. The remainder is produced using electricity – often generated using affordable and reliable coal. Steel is a fundamental material for modern life. The manufacture of steels ultimately delivers the goods and services that growing economies demand – healthcare, telecommunications, improved agricultural practices, better transport networks, clean water and access to reliable and affordable energy. Steel is a vital building block for development – facilitating economic growth and poverty alleviation. In Coal & Steel, the World Coal Institute provides an overview of coal’s role in the iron and steel sector. The report looks at the demand and supply of coal and steel, the importance of steel to our daily lives, describes manufacturing processes and considers options to reduce environmental impacts, including carbon capture and storage. Key Messages Metallurgical coal, also referred to as coking coal, is a vital ingredient in the steel making process. Steel is a man-made alloy of iron and carbon – carbon is found in coal. Coal is abundant, affordable and geographically well-distributed. Major developed and developing economies are able to utilise large indigenous coal reserves, while coal is also available from a wide variety of sources in a well-supplied worldwide market. Steel is essential to modern societies: food production and preparation; water collection, purification and delivery; healthcare; transport systems – cars, trains and ships; and modern communication systems all depend on steel. Strong population growth and rapid urbanisation is driving demand for steel – as cities develop, housing, water and electricity are urgently required and transport and communication links have to expand. Steel is critical in the energy sector – it is used for fuel exploration, production, electricity generation and various forms of supply infrastructure. Major efficiency gains have been achieved in the integrated iron and steel sector. Several innovative solutions are being developed to further reduce, manage and control emissions from the process. Carbon capture and storage used directly in the process, as well as at the power stations generating electricity for electric arc furnaces, could reduce sector emissions to the atmosphere to near zero. Steel is a vital building block for development – it facilitates economic growth and poverty alleviation and is a major element in improving quality of life. Coal is an essential input in the production of steel. Steel is a man-made alloy of iron and carbon – and that carbon usually comes from coal. Almost 70% of the steel produced today relies directly on metallurgical coal, also referred to as coking coal. The remainder is produced by recycling scrap steel (itself originally produced directly using coal) using electricity – often generated using affordable and reliable steam coal. Increasing Demand for Steel Over the last 35 years steel production worldwide has almost doubled, from less than 600 million tonnes (Mt) in 1970 to around 1.2 billion tonnes in 2006. The period 2000-2006 has seen unprecedented growth, with global figures rising over 47%. Much of the demand for steel is being driven by the strong and rapid economic growth of China and India. In 2006, economic growth rates in those countries were 11% and 9% respectively. With a population of over 1 billion in India, and almost 1.3 billion in China, the demand for products and services has fuelled an almost insatiable demand for steel. China and India together consumed over 445Mt of steel in 2006, around 40% of total global crude steel consumption. This is set to continue as India is projected to eclipse China in population size by 2025 and the two countries will account for around 36% of the global population. Rapid urbanisation worldwide is driving demand still further – as cities grow, housing, water and electricity are urgently required. Transport links must be expanded to meet the geographical growth of urban and peri-urban areas. The availability and reliability of modern communication systems also becomes ever more important as urban economies become more sophisticated. Around 4.9 billion people are expected to be urban-dwellers by 2030 - 60% of the world’s population. This will place huge pressure on existing infrastructure and create significant demand for housing, better transport systems, communications networks, energy, sanitation and healthcare. Coal will continue to play a major part in the manufacture of the world’s steel for the foreseeable future. The well-supplied world market means that metallurgical coal can be delivered worldwide, facilitating the manufacture of steels which will ultimately deliver the goods and services that growing economies demand. Coking coal has particular physical properties that on heating to over 1000°C (in the absence of air) causes the coal to soften, liquefy, then resolidify into hard but porous lumps, known as ‘coke’. As a major raw material fed into the blast furnace, coking coals must be of high quality to support the charge of a blast furnace with as little degradation as possible, providing high thermal efficiency and metal reduction. Coking coals must also be low in sulphur, phosphorus and alkalis - such as sodium and potassium. Almost all coking coal produced globally is transformed into coke in a coke oven and used in blast furnaces for the production of pig iron for the steel alloy, although some is also used in the power sector. Coking Coal Demand & Supply World demand for coking coal increased from 635Mt in 2005 to 706Mt in 2006. China, India, Japan, Russia and Ukraine together accounted for around 74% of total global consumption of coking coal in 2006. The largest producers of coking coal are China and Australia. Coking Coal Trade There is a sizeable market in coking coal, with world trade at 222Mt in 2006 – representing 27% of global hard coal trade. Coking coal exports to Asia-Pacific are estimated to have reached 132Mt in 2006. Australia remains the world’s largest coking coal exporter, accounting for around 55% of world exports in 2006, at 121Mt. The largest coking coal importers are countries with strong steel demand but lacking in domestic coking coal reserves, such as Japan, South Korea and India. Countries with significant coking coal reserves may choose to transform the coal domestically and export the coke product. About 65% of world coke exports originate in non-OECD countries, including China, Russia and the Ukraine. Some coke is exported from OECD countries – mainly Australia, Czech Republic, Japan, Poland and the USA. Around 70% of coke is imported by major steel producers in the OECD. Steel Production Steel is produced and used worldwide. Significant increases in steel production are usually the result of strong economic growth, as demand for infrastructure, products and services, and transportation systems increases. China continues to dominate steel production and demand, accounting for 34% of global steel production in 2006. Having shown a remarkable four-fold increase between 1996 and 2006, China continues to drive production developments in the global steel sector – producing some 423Mt of crude steel in 2006 – while other Asian economies exhibit much more modest growth (see China case study on page 12). Steel Demand & Trade Global steel demand increased by 9% in 2006, reaching 1.1 billion tonnes. Although most of this was from China, other countries and regions have been experiencing a resurgence in demand for steel. In Europe, strong economic growth has fuelled recent increases in steel production and consumption. Russia has seen strong growth in steel demand, supported by the consumer boom which is spreading to cars and houses, as well as the replacement of ageing infrastructure. Previous sharp declines in North America were reversed in 2006, with the USA producing around 100Mt of steel to help meet its domestic demand. Steel making capacity is expected to increase over coming years. In China, new capacity of 54Mt per year is expected by the end of 2008. The Middle East and Latin America are also expected to significantly increase capacity, with some 34Mt per year planned in Brazil alone. A similar exponential growth in steel demand is expected in India - the Indian government has already planned some $350bn investments in infrastructure development during its Eleventh Five Year Plan (2007-2012). In 2006 global steel trade was up 13% to 283Mt (excluding EU internal trade), while China became the world’s largest exporter of steel products. Consolidation in the Iron & Steel Sector Consolidation in the iron and steel sector is a recent trend, with several mergers within the generally fragmented industry. The largest steel company, ArcelorMittal, now accounts for around 10% of the total market. In 2006 the top five steel producers accounted for 19% of world production. Consolidation has been occurring in most regions (except China) and is likely to continue, with moves to maintain basic production near to raw materials but increasingly producing finished steel near to the major consuming markets There are thousands of types of steel – each providing different characteristics due to the specific combination of elements in the alloy. Adding other elements to the hot metal provides a wide range of alloy steels, such as stainless steel. The most common is carbon steel, which is composed simply of iron and carbon. Changing the amount of carbon in the steel affects the hardness of the alloy, enabling a variety of uses. Low-carbon steel (up to 0.35% carbon) is commonly used for drinks or food cans but can also be converted into a wide range of alloys, such as engineering steels and tool steels. Medium and high carbon steels (0.35%-over 1%) may also be used for a wide range of applications, including surgical steels. Stainless steels contain a minimum of 10% chromium, often combined with nickel, to resist corrosion. All of these types of steel are produced using coal. The development impact these goods and services have on communities – through growing economies, raising quality of life and alleviating poverty – is therefore also reliant on coal. Buildings & Construction Steel is a universal building material due to its strength, durability, versatility and affordability. The superstructures of skyscrapers, bridges, high-rise apartments and commercial buildings and offices are built with steel. Society’s need for housing is great and increasing. Around 1.1 billion people live in inadequate housing conditions in urban areas alone. Some 21 million new housing units are needed each year to meet present growth in developing countries. Steel is an ideal material to help meet this growing need – it is long-lasting, versatile, earthquake resistant and 100% recyclable. Energy Systems Steel is critical in the energy sector – it is used for fuel exploration, production, electricity generation and in supply infrastructure. Mines, offshore platforms, thermal and nuclear power plants, hydroelectric dams and power plants, and renewable energy systems are all dependent on steel**.** New forms of steel will enable power generation to reach higher levels of efficiency, helping in the drive to significantly reduce carbon dioxide (CO2) emissions from the sector. Ultra-supercritical (USC) coal-fired power plant operate at higher temperatures and pressures than conventional pulverised coal plant, and can achieve operating efficiencies of greater than 45%. USC plant require specialist steels in order to withstand these conditions. These new plants are being built worldwide but continuing materials research is being undertaken to improve the steels available. Other advanced technologies such as Integrated Gasification Combined Cycle (IGCC) depend on the use of improved steel materials to achieve larger commercial capacities, matching those of the current conventional thermal power stations. Even renewable energy systems are dependent on steel (and therefore coal) for their infrastructure needs, as well as to distribute that energy to users. Wind turbines, for example, are supported by steel towers which are typically constructed using corrosion resistant steel. Transmission and distribution systems also rely on steel. The world’s tallest suspension tower, for example, allows power transmission lines to cross the Yangtze River in China. Each tower is 346.5m high and the project was built with 4300t of steel. The towers, completed for the East China (Jiangsu) Power Transmission Project and funded by the World Bank, form part of the 500kV transmission line project from Yan Cheng Power Station in Shanxi Provence in the north of China to Dou Shan Substation in Jiangsu Province in the south of China. Given its role in helping to produce and distribute electricity, steel is therefore vital to economic development and alleviating poverty. There are currently 1.6 billion people without access to electricity. While energy systems themselves are not sufficient to eradicate extreme poverty, they are necessary to create the conditions for economic growth and improved social equality.

### A2: Railroads Solve

#### Railroads don’t solve because they are too expensive

Mellish, 07-U.S. Energy Information Administration (“Coal Transportation Issues”, Issues in Focus) http://205.254.135.7/oiaf/aeo/otheranalysis/cti.html

When the railroad industry was deregulated in the early 1980s, consumers benefited from a long period of declining coal transportation rates. For coal shipments to electric utilities, rates in constant dollars per ton fell by 42 percent from 1984 to 2001 [111]. More recently, railroads have been raising base transportation rates and implementing fuel surcharge programs. There are also concerns that railroads are failing to meet their common carrier obligation with regard to reliability of service [112]. The national average rate for coal transportation in 2005 was approximately 6 percent higher (in constant dollars) than in 2004 [113]; and according to BNSF, average revenue per car in the first 6 months of 2006 was 7 percent higher than in the same period of 2005 as a result of contract rate escalations, fuel surcharges, and increases in hauling distances [114]. Recent increases in rates have caused shippers to question their fairness and to raise the possibility that the railroads may be exercising market power. Since deregulation, four railroads have dominated rail transportation of coal: CSX Transportation (CSX) and NS in the East and UP and BNSF in the West. The concentration of coal freight business among a few carriers has led to claims of pricing power, in particular from coal shippers that have no alternative to relying on a single railroad. In 2004, when both UP and BNSF made their rates public by posting them on their web sites, some called it price collusion, in that the two companies could see each other’s rates and, potentially, harmonize them. In February 2005, the U.S. Department of Justice initiated an investigation of their pricing activities. In October 2006, while not drawing any conclusions, the Government Accountability Office recommended that the state of competition in the freight railroad industry be analyzed [115]. The U.S. Department of Transportation’s Surface Transportation Board (STB) has also been asked to review the reasonableness of rates imposed on some captive customers. Typically, for a rate case to be brought before the STB, there must be evidence suggesting not only that the railroads charge more than 180 percent of their variable cost to the captive shipper but also that construction of a new rail line to serve the captive customer’s needs would be more economical than the prices currently charged. In cases decided from 2004 through June 2006, one showed an unreasonable rate, three were settled voluntarily, and two were decided in favor of the railroads [116]. Because concerns have been raised about the cost and time involved in preparing rate cases, the STB instituted a series of rulemakings in 2006 to improve the process by modifying its methods and procedures for large rail rate disputes and revising its simplified guidelines for smaller rate disputes. A number of factors, including railroad profitability, the need for more investment, and increased fuel expenses in recent years, may be contributing to the recent increase in coal transportation rates. One motive for price increases by the railroads is to improve their rate of return on investment. The STB identifies a railroad as “revenue adequate” if its return on investment exceeds the industry’s average cost of capital, as estimated by the STB. By this standard, only NS was considered revenue adequate in 2004 and 2005, whereas none of the railroads was considered revenue adequate in 2003 [117]. The railroads have argued that, after deregulation, savings resulting from consolidation of redundant infrastructure were passed on to their customers, but that such savings are no longer attainable. Instead, they typically state that higher prices are needed to add infrastructure in order to keep pace with demand. Most recently, each of the railroads has instituted a fuel surcharge program in response to rising fuel prices. The surcharge programs have been cited by many of the railroads as a success, and they have contributed to record-breaking profits. UP, for instance, reported profits for the fourth quarter of 2005 that were triple those of the fourth quarter of 2004 [118]. Some rail customers in the coal industry have in turn claimed that the railroads are “double dipping,” recovering more through the surcharges than they spend on fuel. The railroads have maintained that their fuel surcharge programs are transparent, but most customers appear to disagree. Each of the railroads has implemented its program differently, choosing different fuel price targets and thresholds that trigger the surcharge. For instance, BNSF and UP use EIA’s on-highway diesel price as the basis for determining whether a fuel surcharge will be implemented, whereas NS and CSX use the WTI crude oil price. As of July 1, 2006, NS was applying a surcharge when the monthly WTI average price exceeded $64 per barrel [119]. CSX begins its price adjustments when the WTI price reaches $23.01 per barrel [120]. The STB has stated that the surcharge programs, while not unreasonable, were implemented in an unreasonable manner that lacked transparency. It simultaneously recommended the use of a program that would be linked more tightly to actual fuel usage and would require all carriers to use the same fuel index [121]. The response from the railroads has been mixed, with BNSF stating that the STB lacks authority to make a ruling unless a formal shipper’s complaint is brought forward [122] and CSX expressing a willingness to comply “under future guidance from the STB” [123].

## Disaster Relief Advantage

### 1AC Disaster Relief Advantage

#### Hospitals are closing down—hurting minorities in need

Marjorie Valbrun, writer for Americas Wire,9-9-10 date published, “Hospital Closings Jeopardize Care in Poor, Urban Communities”, American Wire http://www.americaswire.org/drupal7/?q=downloadable-articles

—Escalated hospital closures in urban communities are raising concern about whether minorities can receive quality health care, especially trauma treatment, when emergency care facilities are miles from their neighborhoods. Public officials in Cleveland and neighboring East Cleveland are waging a legal dispute with the renowned Cleveland Clinic, which sought to close a local trauma center. Other municipalities nationwide are taking steps to prevent hospitals from closing or moving to wealthier suburbs. Public health advocates have long decried the steady closures of so-called safety-net hospitals in communities populated by people of color with low or moderate incomes. For at least three decades, these advocates have joined community activists, social scientists and beleaguered city and county officials in warning that this trend threatens health outcomes in communities that need hospitals most. Poor neighborhoods frequently have higher rates of uninsured or underinsured residents with serious health care needs and less access to private health care services. “This problem has been escalating dramatically and is a consequence of a system where health care is a market commodity that is bought and sold by those who can afford it,” says Brian D. Smedley, vice president and director of the Health Policy Institute at the Joint Center for Political and Economic Studies in Washington, D.C. “Those who can afford it get it, and those who can’t struggle to get care, often at a lesser quality. It will escalate as the health care crisis worsens and a population that has higher health care needs and health care problems gets worse and worse and ends up in emergency rooms to get treatment at much greater costs that we all will have to bear.” About half of the nation’s 50 million uninsured are people of color, many with jobs that provide no insurance or just nominal coverage offering very little protection in case of a health crisis or hospitalization. Smedley says reduced state and federal government subsidies to hospitals have aggravated the closure problem. Although the health care reform law will eventually expand insurance coverage to more people and help hospitals recoup costs for uncompensated care, more cuts to federal payments to hospitals with high uninsured patient loads will pay for the expansion. Additionally, the law doesn’t take effect for three years and would still leave about 18 million people uninsured. “It’s unclear what the long-term implications will be, but we know it’s better to make sure people get health care and access to local primary care physicians and health clinics and hospitals so they don’t get sick enough to need hospitals,” Smedley says. Such warnings have done little to slow closures or stem hospitals’ exodus from urban centers to wealthier suburban communities, or from mostly minority suburban neighborhoods to predominantly white ones. Very often, these hospitals were publicly funded or nonprofits whose administrators insisted that other area hospitals would pick up the slack. Advocates say this has not happened. Hospitals have closed or are planned for closure in Cincinnati, Philadelphia, St. Louis, New York, Washington and many parts of New Jersey. Detroit has lost more than 1,200 hospital beds since 1998 because of closures and has no public hospital. Nor does Philadelphia. Physicians who worked for closed hospitals and had local offices or offered outpatient services locally often leave with them. The Robert Wood Johnson Foundation says closures have created considerable health care gaps for those reliant on the hospitals. A 2005 report by the State University of New York Downstate Medical Center on hospital care in the 100 largest U.S. cities and their suburbs found that “more public hospitals were lost between 1996 and 2002 (16 percent in cities and 27 percent in the suburbs) than for-profit (11 percent in cities and 11 percent in suburbs) and non-profit hospitals (11 percent in cities and 2 percent in the suburbs).” The authors said the findings contrasted starkly with the relatively moderate decline in the number of hospitals nationwide. The report also found that hospitals underserve high-poverty suburbs while low-poverty suburbs brim with them. “Public hospitals may become an endangered species,” Dennis Andrulis, Ph.D., the study’s lead author, concluded. In the late 1990s, researchers at Boston University School of Public Health reviewed data on acute care hospitals in 52 large and midsize U.S. cities from 1936 through the mid-1990s and found that nearly 28 percent of them had closed between 1980 and 1997. They concluded that “the pattern of hospital closings in U.S. cities in recent decades may have damaged access to care generally, may have had an adverse and disproportionate impact on minority Americans specifically, and may even have increased the cost of health care.” Lynne Fagnani, senior vice president of the National Association of Public Hospitals and Health Systems in Washington, says sustaining urban hospitals requires “state support, but with the recession, they have lost that. With more low-income people getting health care coverage in 2014, we’re going to need a strong safety-net health care system . . . that can serve these populations.” Until that happens, problems “will get worse not better,” says Ellen Kugler, executive director of the National Association of Urban Hospitals. “Nonprofit safety-net hospitals are very fearful for their future. These are longstanding community hospitals that have stayed committed to and served these communities for decades. “Many are religiously founded and have a mission to stay and serve . . . . They don’t want to leave, but at some point, you have to be able to pay your staffs, keep electricity on, modernize your buildings and have an electronic filing system. That all costs millions of dollars that they have to find somewhere.” Kugler says some hospitals have downsized, becoming just drug and alcohol treatment centers, for instance, or long-term care centers. Others have opened branches in wealthy suburban areas with a well-insured patient base to help offset costs at urban locations. Hospitals “are looking at tens of millions in lost revenue, and it’s hard to see sustainability,” she says. “These hospitals are older, they need more repairs and infrastructure updates. How can you plan for the future, fix a boiler, fix the 50-year-old heating and air conditioning system? How do you get new technology, or a new MRI machine or pay staff? Community residents and their advocates are organizing neighborhoods, holding protest rallies, enlisting help from civil rights organizations and seeking injunctions to prevent or delay closures. At a minimum, hospital administrators find that they can’t just leave without being accountable to people they served. They’re also more mindful of potential public relations pitfalls. In September, the University of Pittsburgh Medical Center voluntarily agreed to provide temporary primary and urgent-care services in Braddock, Pa., and neighboring communities after a complaint was filed with the U.S. Department of Health and Human Services on behalf of African-Americans alleging civil rights violations. The complaint said closing UPMC’s Braddock hospital hurt residents’ ability to obtain health care because they depend on public transportation and would face time-consuming commutes to neighboring hospitals. Cleveland Clinic administrators temporarily delayed closing a local trauma center after the mayors of Cleveland and East Cleveland filed suit in October. Four other local hospitals had shut down over the last decade. The clinic planned to move trauma services from Huron Hospital, which serves neighborhoods in both cities, to a suburban area. The mayors withdrew the suit after clinic representatives agreed to keep the Huron center open while both sides seek a solution “that would continue to meet the needs of area residents.” Each retained the right to return to court if no compromise is reached. Edward Eckart, commissioner of Cleveland’s Emergency Medical Service Division, says the best solution is to keep the center open. “The hospital is a significant resource for us and specifically for trauma patients,” he says, noting that 65 percent of trauma injuries treated there originate near the hospital. “ . . .To move the trauma center to a farther eastern suburb that has a very low incidence of traumatic events just doesn’t make sense.” Meanwhile, the Cincinnati NAACP reacted strongly when Mercy Health Partners announced plans to close two city hospitals and relocate another it had recently purchased to a wealthier suburb. Representatives of Catholic Healthcare Partners, to which Mercy belongs, agreed to attend the NAACP’s local general meeting to explain the rationale for the closures. “What is currently unfolding before our eyes is Mercy Health System’s urban Cincinnati divestment strategy, weakening safety net services to the poor,” Christopher Smitherman, president of the Cincinnati NAACP, wrote by e-mail to a Catholic Health Partners representative. “This behavior is antithetical to an appropriate community service ethic and contrary to any hospital vision, mission and values statement that I know of, because it injures the poor and those who are most vulnerable in our society.” David Hayes-Bautista, a professor of medicine at UCLA and director of its Center for the Study of Latino Health and Culture, says current hospital closures echo California’s experience in the late 1960s when about 40 county hospitals closed. “Since then, public hospitals have been closing at a rapid clip,” he says. “There are no more than five or six counties remaining that operate their own public hospitals. There’s been sort of an implosion of public hospitals, and the counties have been getting out of that business for the last few years.” When Martin Luther King Jr. Hospital in Los Angeles’ predominately Latino South Central neighborhood closed almost two years ago, Hayes-Bautista says, patient loads but not the budgets of the four remaining county public hospitals increased. Vernellia Randall, a professor of health care law at the University of Dayton School of Law and author of “Dying While Black,” a book about racial disparities in health care, says the problem of hospital closures in black neighborhoods began in the 1930s. “Back then, there were more than 200 hospitals located in minority neighborhoods,” she says. “You’d be lucky to find 20 now. The problem is becoming more obvious and getting more attention now because they’re beginning to close hospitals in communities that, although they have large numbers of blacks, also have a large percentage of whites, where before it was primarily in very poor, predominantly black communities.” Updated research in 2001 at Boston University School of Public Health showed that “about half of the hospitals open in 1936 in neighborhoods that were less than 20 percent African American or Latino in 1990 remained open in 1997, while only about 30 percent of the hospitals located in neighborhoods that were 80 percent or more minority in 1990 remained open in 1997.”

#### Current US disaster relief policy is oriented almost exclusively towards the upper class – this dooms minority communities to marginalization and oppression

Harrelson, Peace Activist, ‘6 (Thomas, February 20, “Capitalism is Racism: An Update on the New Orleans Tragedy” http://www.lookingglassnews.org/viewstory.php?storyid=5109)

Meanwhile, after any academic, economic and historical analysis is completed, we find ourselves again in the very real present and watching while the continuation of this same economic racism is being played out in New Orleans. In our September article, it was observed, “Who owns the most -- and most valuable -- property in New Orleans...? It is the wealthy white business owners, not the poor, African American working families who're struggling to survive. This means that it is the white owners who get priority in all matters regarding the securing and restoration of the city. The business owners were able to evacuate in a safe and timely manner, they will be able to afford to rebuild their homes and businesses and it is their property which is given priority even over the very safety of the good African American people who aren't quite as well off as they are and were therefore left to fend for themselves in this disaster. “This has always been the modus operandi in America. It is always ‘the privileged’ classes who are given priority while the poor and people of color are considered to be second and third class citizens at best. Americans try to fool themselves with the naive idea that racism is a thing of the past; but we have just witnessed a form of capitalistic, institutionalized racism which is in a large part responsible for the deaths of thousands in New Orleans. One of the most frightening things about this is that it is such an inherent part of the capitalist system that most people are blind to it. Here the metaphor of not being able to see the trees for the forest is most appropriate.” In the above statement it was noted that the wealthier (white) home and business owners were the ones who will continue to be given priority “regarding the securing and restoration of the city” while the lower income African Americans will continue to be forced to fend for themselves. This statement was challenged at that time and said to be a negative and judgmental speculation, but history has born out the truth of these words. It was reported in a headline of the Jan. 27, 2006 New York Times that a “Study Says 80% of New Orleans Blacks May Not Return.” Why might they not return? The article states, “New Orleans could lose as much as 80 percent of its black population if its most damaged neighborhoods are not rebuilt and if there is not significant government assistance to help poor people return.” This can basically be understood as a result of the fact that the $85 billion which the US government earmarked for restorations will be used first for infrastructure reconstruction, second for rebuilding the economy -- which basically means restoring (white owned) businesses -- and then a small remaining amount for rebuilding homes. Based on this economic hierarchical system, we can also assume that it will be those homeowners with the strongest economic ties to their community, that is property owners with larger holdings, business owners, etc who will be first in line for these funds (as America's economic historical precedent would confirm). The NYT article states that the most damaged areas of New Orleans, which includes the (majority black population) Ninth Ward, may not be rebuilt at all. This, in itself, is an assurance that a large percentage of the African American community of New Orleans will probably never return to their homes and lives. It was reported in the same NYT article that, “Elliott B. Stonecipher, a political consultant and demographer from Shreveport, La., said that unless New Orleans built housing in flood-protected areas for low-income residents, and also provided support for poor people to relocate, chances were good that many low-income blacks would not return.” “If they didn't have enough resources to get out before the storm,” Mr. Stonecipher said, “how can we expect them to have the wherewithal to return?” The article also said that the Bush Administration opposed bills in Congress to give further aid to New Orleans' residents to rebuild their properties because they have already allocated $85 billion and that was a good start, while they don't think that there is a clear enough recovery plan in place to consider giving more. This is what it all really boils down to here in this capitalist nation; and why it was so easy to predict these sorry events from the start. Those with the resources (the haves) will be able to return to their communities and rebuild their homes and lives while those good souls who -- for no other reason than the fact that their entire race has been oppressed by centuries of greed, violence and bigotry in the US -- do not have the resources (the have-nots) will be forced to find habitation wherever they may and begin again at the very bottom of that same economic ladder which has worked so well for its maker and so poorly for the rest of us.

#### The struggle against racism must take top priority – it outweighs nuclear war

Activism.net, no date (“Activism: Peace: NVCD: Discrimination” http://www.activism.net/peace/nvcdh/discrimination.shtml)

In this action, our struggle is not only against missiles and bombs, but against the system of power they defend: a system based on domination, on the belief that some people have more value than others, and therefore have the right to control others, to exploit them so that they can lead better lives than those they oppress. We say that all people have value. No person, no group, has the right to wield power over the decisions and resources of others. The structure of our organizations and the processes we use among ourselves are our best attempt to live our belief in self-determination. Besides working against discrimination of all kinds among ourselves, we must try to understand how such discrimination supports the system which produces nuclear weapons. For some people who come to this action, the overriding issue is the struggle to prevent nuclear destruction. For others, that struggle is not separate from the struggles against racism, sexism, classism, and the oppression of groups of people because of their sexual orientation, religion, age, physical (dis)ability, appearance, or life history. Understood this way, it is clear that nuclear weapons are already killing people, forcing them to lead lives of difficulty and struggle. Nuclear war has already begun, and it claims its victims disproportionately from native peoples, the Third World, women, and those who are economically vulnerable because of the history of oppression. All oppressions are interlocking. We separate racism, classism, etc. in order to discuss them, not to imply that any form of oppression works in isolation. We know that to work against any one of these is not just to try to stop something negative, but to build a positive vision. Many in the movement call this larger goal feminism. Calling our process "feminist process" does not mean that women dominate or exclude men; on the contrary, it challenges all systems of domination. The term recognizes the historical importance of the feminist movement in insisting that nonviolence begins at home, in the ways we treat each other. Confronting the issues that divide us is often painful. People may feel guilty, or hurt, or react defensively when we begin to speak of these things, as if they were being personally accused. But working through this pain together, taking responsibility for our oppressive behavior, is part of our struggle to end the nuclear arms race. Asking members of oppressed groups to be the catalyst for this change is avoiding our own responsibility for discrimination. Most of us benefit from some form of privilege due to our sex, or class, or skin color, or sexual orientation, but that privilege is limited. None of us alone has the power to end institutions of discrimination. Only when we struggle together can we hope to do so -- and when pain and hurt arise in that struggle, we can see it as a measure of the depth to which discrimination hurts us all, keeping us separated and divided in our strength. Racism, Classism, Sexism, Heterosexism and Militarism Part of struggling against nuclear weapons involves understanding the ways in which the oppression of particular groups of people supports militarism, makes the institutionalized system of war and violence appear "natural" and "inevitable." For instance, heterosexism, or the assumption that sexual relations are only permissible, desirable, and normal between opposite sexes, justifies a system of rigid sex roles, in which men and women are expected to behave and look in particular ways, and in which qualities attributed to women are devalued. Thus, men who are not willing to be violent are not virile -- they are threatened with the real sanctions placed on homosexuality (physical violence, housing and economic discrimination) unless they behave like "real men." The military relies upon homophobia (the fear of homosexuality) to provide it with willing enlistees, with soldiers who are trained to kill others to prove their masculinity. Sexism, or the systematic devaluation of women, is clearly related to this. Women have traditionally opposed war because women bear the next generation and feel a responsiblity to protect it. But feminists are not content to speak only from traditional roles as mothers and nurturers. Many activists see a feminist analysis as crucial to effectively challenging militarism. The system of patriarchy, under which men benefit from the oppression of women, supports and thrives on war. In a sexist or patriarchal society, women are relegated to limited roles and valued primarily for their sexual and reproductive functions, while men are seen as the central makers of culture, the primary actors in history. Patriarchy is enforced by the language and images of our culture; by keeping women in the lowest paying and lowest status jobs, and by violence against women in the home and on the streets. Women are portrayed by the media as objects to be violated; 50% of women are battered by men in their lives, 75% are sexually assaulted. The sexist splitting of humanity which turns women into others, lesser beings whose purpose is to serve men, is the same split which allows us to see our enemies as non-human, fair game for any means of destruction or cruelty. In war, the victors frequently rape the women of the conquered peoples. Our country's foreign policy often seems directed by teenage boys desparately trying to live up to stereotypes of male toughness, with no regard for the humanity or land of their "enemy." Men are socialized to repress emotions, to ignore their needs to nurture and cherish other people and the earth. Emotions, tender feelings, care for the living, and for those to come are not seen as appropriate concerns of public policy. This makes it possible for policymakers to conceive of nuclear war as "winnable." Similarly, racism, or the institutionalized devaluation of darker peoples, supports both the idea and the practice of the military and the production of nuclear weapons. Racism operates as a system of divide and conquer. It helps to perpetuate a system in which some people consistently are "haves" and others are "have nots." Racism tries to make white people forget that all people need and are entitled to self-determination, good health care, and challenging work. Racism limits our horizons to what presently exists; it makes us suppose that current injustices are "natural," or it makes those injustices invisible. For example, most of the uranium used in making nuclear weapons is mined under incredibly hazardous conditions by people of color: Native Americans and black South Africans. Similarly, most radioactive and hazardous waste dumps are located on lands owned or occupied by people of color. If all those people suffering right now from exposure to nuclear materials were white, would nuclear production remain acceptable to the white-dominated power structure? Racism also underlies the concept of "national security": that the U.S. must protect its "interests" in Third World countries through the exercise of military force and economic manipulation. In this world-view, the darker peoples of the world are incapable of managing their own affairs and do not have the right to self-determination. Their struggles to democratize their countries and become independent of U.S. military and economic institutions are portrayed as "fanatic," "terrorist," or "Communist." The greatest danger of nuclear war today lies in the likelihood of superpower intervention in Third World countries, fueled by government appeals to nationalistic and racist interests. All forms of discrimination are interrelated with economic discrimination, or classism. Classism justifies a system in which competition is the norm, and profit is believed to be a universal motivation. Thus, poor and working class people lack access to education, leisure time and frequently basic things like food and shelter. But a classist society blames them for their poverty, or devalues their particular way of living. Classism values certain kinds of work over others, and sets up a system of unequal rewards. Our society threatens the majority of our members with economic insecurity, forcing us to accept things the way they are for fear of losing the few things we've gained through hard work. Since most poor people are women, children and people of color, classism and other forms of discrimination work together to hide the injustice of our economic system. Poor and working class people feel the effects of the military directly, profoundly, and brutally. Vital social services have been cut to feed the Pentagon. Inflation, aggravated by the military budget, chews away at what is left after disproportionately high taxes are deducted from our pay. Poor people are prime military recruits, with historically little access to draft deferments or information about conscientious objection, forced by unemployment to think of the military as a "career opportunity." Our militarized society does not support cooperative and socially productive work, but counts on unequal competition and economic deprivation to provide workers in defense industries, miners in uranium mines, and soldiers in the armed forces. No human being is born with discriminatory attitudes and beliefs. Physical and cultural attitudes are not the causes of oppression; these differences are used to justify oppression. Racist, classist, sexist, heterosexist, and all other forms of discriminatory attitudes are a mixture of misinformation and ignorance which have to be imposed on young people through a painful process of social conditioning. These processes are left unchallenged partially because people feel powerless to do anything about them. But the situation is not hopeless. People can grow and change. Many successful struggles have taken place against structures of exploitation and discrimination. We are not condemned to repeat the past. Discriminatory conditioning can be analyzed and unlearned. All people come from traditions which have a history of resistance to injustice, and every person has their own individual history of resistance to discriminatory conditioning. This history needs to be recalled and celebrated, and people need to listen to and learn from other people's histories. When people act from a sense of informed pride in themselves and their own traditions, they will be more effective in all struggles for justice and peace.

#### Inland waterways allow for quick and efficient disaster relief operations via floating hospitals

Heather Nantchmann 8/11 PhD (“Emergency Response via Inland Waterways.” Research and Innovative Technology Administration (RITA) http://utc.dot.gov/publications/spotlight/2011\_08/html/spotlight\_1108.html)

A catastrophic disaster can disable or destroy the very same vehicles, roads, and bridges that are needed to provide emergency response. But for many communities, inland waterways may provide access to equipment and emergency services when other means of transportation are unavailable**.** A goal of the Mack-Blackwell Rural Transportation Center (MBTC) is to enhance community emergency preparedness and disaster relief efforts by developing an index to help emergency planners evaluate the feasibility of incorporating inland waterways into their emergency response planning. Inland waterways may be especially useful for rural emergency planners who must cover a large geographical area with limited resources**.** Inland waterways are a tremendous asset to the United States, providing an economical and environmentally sound mode for moving cargo. The U.S. Army Corps of Engineers is responsible for nearly 12,000 miles of commercial, navigable U.S. inland and intracoastal waterways–the Mississippi/Ohio River System, the Gulf Intracoastal Waterway, the Intracoastal Waterway along the Atlantic Coast, and the Columbia-Snake River System in the Pacific Northwest. Inland and intracoastal waterways serve 38 States with 192 commercially active lock sites.1 Historically, tugs and barges have been used to provide emergency response services. As part of recovery efforts in the wake of the January 2010 Haiti earthquake, tugs and barges participated in the vast international relief operation, carrying large volumes of food and supplies as well as aid to help ease shortages. MBTC has developed a Waterway Emergency Service (WES) index to measure the potential of individual counties to benefit from inland waterway emergency response. The WES index consists of seven factors: Among the 145 counties with access to the Mississippi River, more than 73% had at least a medium level of potential to benefit from emergency response via inland waterways. Distance from the public ports on the lower Mississippi River precluded 171 counties in the four-state region from use of inland waterway emergency services. In addition to the WES index, MBTC research has led to the development of a systematic planning strategy for utilizing the inland waterway transportation system to provide emergency response. The research team is currently developing an optimization-based methodology to determine the number of barges required to provide the best possible inland waterway-based emergency support. The methodology will also help emergency response planners determine the optimal starting location of available barges to ensure that the communities with the potential to benefit from emergency response via inland waterways have maximum coverage.

#### **Floating hospitals are especially targeted at helping minority communities – bridges the gap between the rich and poor**

Nachtmann & Pohl 2010 (January 14, 2010, Heather & Edward A., both Ph.D. associate professors in the Department of Industrial Engineering at the University of Arkansas, “Emergency Response via Inland Waterways,” http://ww2.mackblackwell.org/web/research/ALL\_RESEARCH\_PROJECTS/3000s/3008/MBTC%203008.pdf)

Which types of communities would benefit from waterway-based emergency medical response? Communities that are isolated from major population centers may not have access to the emergency services and medical facilities that are readily available in large cities. If these types of communities are located near inland waterways, then they may be candidates for emergency medical response via those inland waterways. Communities that are large enough to have emergency services easily accessible and communities that are large distances from inland waterways are less likely to benefit from waterway-based medical assistance. However, waterway-based response could prove beneficial to communities that depend heavily on non- waterway transportation means if disruption occurs to transportation infrastructure such as major interstates or bridges. What is the possibility of disaster occurrence in the serviceable areas? Once candidate communities are identified, it is also necessary to identify the possible catastrophic emergency events that could occur in those areas. Knowing which communities are likely to have certain emergencies is useful for determining the feasibility of barge response for that community. This information may be readily available or may need to be derived. In our case study of Arkansas, for example, we use historical tornado data to estimate the risk of a violent tornado occurring in each county.

### Floating Hospitals Solvency

#### Floating hospitals are feasible and useful, empirics prove.

Nachtmann & Pohl 2010 (January 14, 2010, Heather & Edward A., both Ph.D. associate professors in the Department of Industrial Engineering at the University of Arkansas, “Emergency Response via Inland Waterways,” http://ww2.mackblackwell.org/web/research/ALL\_RESEARCH\_PROJECTS/3000s/3008/MBTC%203008.pdf)

Even in recent times, the idea of floating hospitals is being put to practical use. Using marine vessels to provide medical care to disaster victims and the poor is becoming quite common. In May 2008, victims of the Burmese cyclone received medical care on board three ships set aside for such a purpose. Each boat was equipped with a clinic room, medicines, and a dental chair (Swe, 2008). In addition, the humanitarian organization known as Marine Reach owns a floating hospital that provides services to poor, isolated communities in the Pacific Islands and Southeast Asia (Marine Reach, 2009). Another example is the 522-foot floating hospital known as the Anastasis, shown in Figure 4, which cruises the west coast of Africa providing medical services to impoverished people (Thomas, 2003). Photo courtesy of labnews.co.uk Figure 4: Floating Hospital Anastasis. Perhaps the most impressive floating hospital is the USNS Comfort, shown in Figure 5. Comfort is a 900-foot, ten-deck vessel with 1,000 hospital beds. The ship and her crew assisted with Hurricane Katrina disaster relief efforts. The vessel is capable of handling all complicated 16 procedures, with the exception of heart surgery and organ transplant. It has CAT scan facilities, twelve operating theaters, a blood bank, a dental facility, and even a manufacturing facility for eyeglasses. It staffs over 1,200 people, and was converted from an oil tanker to a floating hospital in 1983 (Singh, 2003).

#### Feasibility of Using Hospital Boats Apparent in Future Disasters

Nachtmann & Pohl 2010 (January 14, 2010, Heather & Edward A., both Ph.D. associate professors in the Department of Industrial Engineering at the University of Arkansas, “Emergency Response via Inland Waterways,” <http://ww2.mackblackwell.org/web/research/ALL_RESEARCH_PROJECTS/3000s/3008/MBTC%203008.pdf>)

Many emergency operations plans (EOPs) are based on the assumption that all standard means of transportation will be available and feasible when an emergency occurs. In many cases, however, the disaster that initiates the EOP may disable emergency vehicles or destroy the roads or bridges that are vital to responding to the emergency. As transportation security professionals prepare contingency plans for emergency response, it is important to recognize the resource offered by the nation’s inland waterways. For many communities, inland waterways can provide access for equipment and people when other means of transportation are unavailable due to capacity constraints or destruction. Inland waterways may be especially useful for emergency medical response in rural areas. Because of limited resources in rural communities, emergency planners must take an all-hazards approach to emergency planning across large geographical areas. Inland waterways could be used for medical response to a variety of emergencies across a large area. For example, there are over 1,000 miles of navigable waterways in the state of Arkansas. These waterways could be used to assist in response to a catastrophic event such as a New Madrid earthquake in the northeast corner of the state.

#### **Hospital Boats needed in emergencies due to versatility**

**Furbee, P., Coben, J., & Smyth, S. 2006** (March 23, 2006, Paul, Jeffery, Sharon, MA, MD, BA, respectively teachers and researchers at the West Virginia University, “Realities of Rural Emergency Medical

Services Disaster Preparedness” <http://pdm.medicine.wisc.edu/Volume_21/issue_2/furbee.pdf>)

Introduction: Disaster preparedness is an area of major concern for the medical community that has been reinforced by recent world events. The emergency healthcare system must respond to all types of disasters, whether the incidents occur in urban or rural settings. Although the barriers and challenges are different in the rural setting, common areas of preparedness must be explored. Problem: This study sought to answer several questions, including: (1) What are rural emergency medical services (EMS) organizations training for, compared to what they actually have seen during the last two years?; (2) What scale and types of events do they believe they are prepared to cope with?; and (3) What do they feel are priority areas for training and preparedness? Methods: Data were gathered through a multi-region survey of 1,801 EMS organizations in the US to describe EMS response experiences during specific incidents as well as the frequency with which these events occur. Respondents were asked a number of questions about local priorities. Results: A total of 768 completed surveys were returned (43%). Over the past few years, training for commonly occurring types of crises and emergencies has declined in favor of terrorism preparedness. Many rural EMS organizations reported that events with 10 or fewer victims would overload them. Low priority was placed on interacting with other non-EMS disaster response agencies, and high priority was placed on basic staff training and retention. Conclusion: Maintaining viable, rural, emergency response capabilities and developing a community-wide response to natural or man-made events is crucial to mitigate long-term effects of disasters on a local healthcare system. The assessment of preparedness activities accomplished in this study will help to identify common themes to better prioritize preparedness activities and maximize the response capabilities of an EMS organization.

### Disaster Relief Internal Link

#### Hospital Barges can provide disaster aid to areas hit by hurricanes and other natural disasters

Alberts 2010 writer for Canwest News Service (January 16, 2010“U.S. hospital ship on biggest mission; USNS Comfort; Major challenge just getting injured aboard” National Post, All But Toronto Edition, LexisNexis)

BALTIMORE - Inside the USNS Comfort's cavernous emergency room, Commander Tim Donahue admits to some apprehension as he prepares to sail on the most important humanitarian mission of his career. He was in New Orleans after Hurricane Katrina and has been to Haiti twice to provide medical care after a hurricane. But the 41-year-old naval surgeon expects he and 550 other medical personnel headed there again on the U.S. military's "floating hospital" will be tested in unimaginable ways. "This is a fully functioning hospital, but it's not a shore-based hospital. In the end, that's a logistical concern," Cmdr. Donahue said yesterday. "Pier facilities don't allow us to come pier-side. There are challenges in getting people from shore to ship." With every passing hour in Port-au-Prince, where most hospitals were badly damaged in Tuesday's earthquake, the need for the Comfort's doctors, nurses and operating rooms becomes more urgent. With orders from the White House to speed the ship's departure, its home port in Baltimore was abuzz yesterday as dock workers loaded pallets of food, water and medical equipment onto the 23-year-old vessel. But the ship will only leave port today and with a top speed of 17.5 knots ( just over 32 kilometres an hour) may not drop anchor off Port-au-Prince until Thursday. Then the real challenges start. "We're going to expect the worst," said Lieutenant Commander Thomas Olivero, head of the Comfort's operating room, where doctors can perform 20 to 25 surgeries a day. The 41-year-old was a crew member when the Comfort docked at Port-au-Prince in April 2009 for 11 days as part an operation called "Continuing Promise." Haiti was still recovering from several hurricanes and tropical storms. The med-ical staff treated 6,700 patients and performed 161 surgeries. This time, the crew is loading enough supplies for a minimum 45-day deployment. "It was not nearly as bad then as what they face now in Haiti," Lt. Cmdr. Olivero said. "This is the biggest mission the ship has been faced with and I know it's certainly the biggest mission I have been faced with." USNS Comfort has become an all-too-familiar sight in recent years at ports for cities devastated by national disaster. It spent two months in the U.S. Gulf Coast after hurricanes Katrina and Rita in 2005. Two years earlier, it sailed to the Persian Gulf, serving as a trauma centre after the U.S. invasion of Iraq. In April-July last year, its medics treated 100,000 patients in the Caribbean. The ship, which is the length of three football fields and as wide as one, has 250 beds, four operating rooms, a pharma-cy, four X-ray machines and a CT scan unit. Its doctors -- rounded up in recent days from U.S. naval medical centres in Bethesda, Md., Norfolk, Va., and San Diego -- include trauma, orthopedic, eye, neck and neurosurgeons. Physicians will also provide pediatric and ob-gyn care. Captain James Ware, the Comfort's commanding officer, says the scope of the disaster means doctors expect to treat 500 to 750 earthquake victims a day.

"This is really a moment when we think we can have a huge impact," he said.

### CBWs Impact

#### Hospital Barges are ready and can be used for disaster relief and the use of chemical and biological weapons in the US.

Bahrain Tribune, 2003 (March 25, 2003, US floating hospital ready to receive casualties, Bahrain Tribune, LexisNexis)

The world's largest hospital ship, USNS Comfort, is ready for operations in the Arabian Gulf. And, going by the enthu-siasm of its crew, one would think they are looking forward to a busy time ahead. 'While this is not the case and we would rather be bored and wait endlessly, we are nonetheless well-prepared to receive battle casualties,' said the Commander of the ship, Captain, Charles L. Blankeship. "We are a very well trained crew and have had extensive preparations prior to be posted on duty in these waters. However unpleasant a task it might be, we are all set for duty," He said that the crew were forever on their toes. 'Several drills and mock exercises later, we know that we can do a lot.' He said that the ship, since its arrival at its preset location three weeks ago, had been receiving patients. 'They are from ships in the region and the ground forces. Though they are not battle casualties, they need treatment.' Captain Blankeship said that there was an indication last October that they would be required to do duty in this part of the world. 'We were mentally prepared and when the orders came in the first week of January, we were psychologically ready.' The 1000-bed floating hospital facility, which can handle all complicated procedures except heart surgery and organ transplant, is under the 'administrative' command of Captain Richard Jucadi, a merchant mariner, while Captain Blankeship is the head of the medical team on board. Lt.-Commander Edward Austin, said that the crew started seeing 'action' after the 9/11 attacks. "That time, we acted as a support facility for the people helping in the aftermath of the World Trade Centre disaster. "That demonstrated the battle readiness of the crew. Regular exercises and training also ensure that we are fit, the latest sojourn being that in the Baltic Sea last summer, when we were part of a Nato exercise," he said. Work on board the nearly 900-feet long and 10-deck high ship begins when the casualty arrives, airlifted by helicopter or, rarely, by other ships. "The first task is to ensure that they are not affected by chemical or biological weapons and we have an elaborate procedure to check that out. If that is the case, there is complete de-contamination before any other procedures are carried out. After all, if we were to be affected, it would be a disaster," Lt.-Commander Austin said.

## Neg

### 1NC Coal Advantage

#### Coal reliance inevitable and kills the transition to renewable energy

Lloyd, Environment Editor at The Australian, 4-28-’12 (Graham, “King coal still reigns” http://www.theaustralian.com.au/news/features/king-coal-still-reigns/story-e6frg6z6-1226341179267)

IF there is to be a new beginning in global energy, the golden age is unlikely to be powered directly by the wind or sun. Despite high hopes for renewables, the figures show the world to be on the cusp of another fossil fuel boom. King Coal is refusing to die and, without a significant breakthrough in technology, the biggest energy future winner looks certain to be gas. The reality is in stark contrast to the big objectives of Australian Greens leader Christine Milne, who last night used her first speech on energy policy since taking the leadership from Bob Brown to repeat her call for 100 per cent renewable energy and for deep cuts in emissions as fast as possible. Having negotiated the carbon tax arrangements with the Gillard government, Milne has since called for an even firmer government response. While industry groups have argued for the Renewable Energy Target of 20 per cent renewables by 2020 to be scrapped or eased, Milne wants the target toughened up. "Far from getting rid of the RET, we should be lifting it to a more ambitious target, supplementing it with other support mechanisms like feed-in tariffs," she says. Climate Change Minister Greg Combet has defended the government's carbon tax and its starting price of $23 a tonne against criticism that it is out of step with what is happening in carbon markets across the world, where prices have dropped to $10 a tonne in Europe. Releasing Australia's National Greenhouse Accounts this month, Combet said emissions from the electricity generation sector rose by 50 per cent from 1990 to 2001, the strongest growth of all sectors in Australia. "This shows the importance of investing in clean energy sources, like natural gas, wind and solar power, to cut carbon pollution and tackle climate change," he said. Despite the good intentions, renewable energy projects are struggling to get finance, while the federal government's solar and carbon capture and storage "flagship" programs are behind schedule and in constant turmoil. There are deep divisions between the state and commonwealth on climate change policy. Cost blow-outs have forced rooftop solar programs to be wound back, wind projects face tougher planning regimes and heightened local community opposition. Progress on new technologies such as geothermal and concentrated solar has been more expensive and slower than expected. And research by ratings agency Standard and Poor's says coal will continue to dominate Australia's energy mix into the next decade at least. But it is not just the finance sector and Opposition Leader Tony Abbott who are refusing to heed Combet's message. Despite substantial taxpayer subsidies, cutting carbon emissions and replacing fossil fuels with renewable energy is proving to be slow and more difficult worldwide. For US President Barack Obama, the photo opportunities may involve solar panels or wind turbines, but America's fossil fuel use is booming, with oil and natural gas set to power the economy for decades to come. The Fukushima nuclear crisis has thrown Japan's short and long-term energy policy into turmoil, creating an increased dependence on fossil fuels that's likely to continue for at least this decade. China -- already the world's largest carbon emitter, the largest coal producer and the largest user of coal-fired electricity -- is building Asia's largest coal-fired power station in the port city of Beihai, to produce 8GW of energy each year. China is also the world's largest automobile user, with more than 220 million cars on the road. Pollution is choking China as it gallops forward with unprecedented industrialisation and urbansation, but the country -- despite its large investment in wind and solar -- has little choice but to rapidly expand its use of fossil fuels. Even in Europe, where public and government determination to reduce carbon emissions is the strongest in the world, coal may well be in long-term decline but it has made a remarkable short-term comeback. Figures released yesterday by the British government showed that Britain used more coal for power generation in February than in any month since 2009, and the least gas of any month for 14 years. In Germany, power companies are building 11 new coal-burning plants, including the world's largest lignite or brown coal plant, a 2.1GW giant at Neurath. Despite this, energy analysts maintain that renewables will definitely make up an increasing amount of new power generation in Europe. But coal, gas and oil-fired plants will increasingly vie for the role of being the reliable source of power needed to balance the more intermittent supplies such as wind and solar power. The International Energy Agency puts the difficulty of weaning the world off fossil fuels into stark relief in its recent publication, Tracking Clean Energy Progress. "Recent environmental, economic and energy security trends point to major challenges; energy-related CO2 emissions are at a historic high, the global economy remains in a fragile state and energy demand continues to rise," it says. In summary, the IEA found few clean energy technologies are on track to meet the objectives of holding global temperature rises to two degrees. "Cost reductions over the past decade and significant annual growth rates have been seen for onshore wind and solar, but maintaining this progress will be challenging," it says. The IEA says the technologies with the greatest potential for energy and carbon dioxide emissions savings -- carbon capture and storage, and energy-efficient vehicles and buildings -- are making the slowest progress. During the past decade, almost 50 per cent of new global electricity demand was met by coal, and many countries, including India, where 25 per cent of the population still has no access to electricity, have announced plans to rapidly increase construction of coal-fired power plants. The rush to coal and gas has been accelerated by a new crisis in the nuclear industry following the Fukushima disaster in Japan. Safety fears have seen all but one of Japan's 54 reactors shut down, robbing the country of 30 per cent of its energy supply. Liquefied natural gas and, to a lesser extent, oil have stepped into the breach to make up for the immediate shortfall. A new energy policy will be released in a few months and is being debated within government and the community, with the nuclear energy and renewable energy lobbies at opposite ends of the spectrum. The one thing that is certain is that nuclear power, which the government projected would eventually meet 50 per cent of Japan's energy needs, will be struggling to even get close to its pre-Fukushima scale of capacity in the foreseeable future. Renewable energy, in the form of solar and wind and geothermal, will increase its share off a very low base of just a few per cent, although it's seen as doubtful if these sources and hydro can supply the 25 per cent being bandied about in panel discussions on the new energy policy. As investment house Nomura points out, the world's largest wind farm has a capacity of 782MW and "bringing in 35GW of wind power would require 38 such installations in Japan plus a further 1000 offshore sites". "Moreover, 60GW of solar energy would mean 40GW via solar panels on 10 million detached houses and the remaining 20GW in non-residential installations," Nomura's Shigeki Matsumoto wrote in a recent research note. In the short to medium term, gas will be the key energy source, with Australia among the main beneficiaries, although Japan is anxious to find ways to import extra US shale gas cargoes to Tokyo. Like Japan, the US has been squeezed between the political good intentions of renewable energy and the practical realities of energy demand. Last month Obama travelled to Boulder City, Nevada, so he could deliver a speech on alternative energy with the impressive backdrop of solar panels stretching almost as far as the eye could see. "If some politicians get their way, there won't be any more public investments in solar energy," Obama told his audience at the Copper Mountain plant, a giant solar complex built in the desert not far from Las Vegas. He wanted to promote his administration's initiatives for meeting future US energy needs. But he also conveyed, in words and imagery, one of his biggest dilemmas. When he took office more than three years ago, the Democrat President wholeheartedly supported green energy as an antidote for combating the US's economic ills and climate change. Millions of new green jobs in solar and wind-power industries were supposed to be created. Meanwhile, emerging alternative energy sources were meant to reduce dependence on fossil fuels and cut greenhouse gas emissions. None of this has happened. While solar and wind-based power are attracting more interest, the focus of US energy expansion on Obama's watch remains squarely on the development of oil and gas. Fossil fuels are booming, with oil and natural gas set to power America's economy for decades to come. The Copper Mountain project shatters the notion that millions of jobs could be created from green energy or that alternatives to fossil fuel are feasible on a large scale: one million solar panels spread across a desert plain can power a maximum 17,000 homes, while the plant has just 10 employees. Rising oil prices have turned the US government's focus more keenly on developing domestic production and Obama appears to accept this reality. US energy demand is expected to grow by 20 per cent during the next quarter-century and most energy jobs growth is expected in traditional fossil fuels. Pending legislation would require more land made available for drilling. And Republicans, who control the US House of Representatives and could win back the Senate in this year's elections, are also backing legislation that would create energy production targets for all federal government-owned land. Obama revisited climate change policy in a Rolling Stone magazine interview this week, as he sought to woo younger voters and differentiate himself from his Republican challenger, Mitt Romney. But he has already essentially caved in on promoting a carbon cap-and-trade scheme after 2009 legislation was blocked by congress: the issue is off the agenda. Despite setting renewable energy targets as recently as last year, the politics of solar power generation in particular has also pushed Obama into retreat. The failure of solar panel maker Solyndra, which went bankrupt after receiving a $US535 million loan guarantee from the US government, has given the industry a bad name. Obama had thought a solution was at hand in promoting nuclear power as a safe, clean alternative to coal-fired power stations for the future. With no nuclear power plants built in the US since the leak at Three Mile Island near Harrisburg in 1979, he argued that new technology could make the industry safe and efficient without the pollution of carbon emissions. The Japanese nuclear disaster at Fukushima in March last year suddenly took nuclear power off the agenda as a feasible energy source to sell to the public. But while the growth of oil and gas industry in the US looks assured, the future of coal-fired power stations is less clear. The Obama administration's Environmental Protection Agency, headed by administrator Lisa Jackson, is set to impose rules on pollution and polluters that would prevent the construction of further coal-fired plants apart from those with issued permits. It is a similar story in Europe, where industry analysts say those hoping for a return to King Coal should not get too excited. "Right now you might say that coal is enjoying another moment in the sun but that same sun is still setting on it across Europe," says Brian Potskowski, a European power analyst at Bloomberg New Energy Finance. The recent surge in coal consumption in Britain and some other parts of Europe has several causes, the simplest of which is that coal is a lot cheaper than gas. The European economic crisis has helped to produce record low prices in the EU's emission trading system, the world's largest carbon market, reducing the cost penalty of burning coal. While market forces in the US are helping the long-term goal of curbing emissions by making the cleanest fossil fuel, natural gas, cheaper than its rivals, the reverse is happening right now in Europe. Laszlo Varro, the head of the gas, coal and power markets division of the IEA, says that while the US has abundant domestic supplies of cheap gas, Europe is paying more because it imports most of its gas from countries such as Russia, Algeria and Qatar, on long-term contracts linked to the price of oil. Europe also lacks the shale gas supplies that have revolutionised the US power industry. "The geology is more difficult here and the industry has not even started here yet," Varro says, noting France and Bulgaria have already banned the hydraulic fracturing process used to extract shale gas. British coal consumption is further boosted by the fact EU environmental directives to battle problems such as acid rain will force coal plants that lack the required equipment to close by the end of 2015, prompting the operators "to run them flat out to squeeze as much use out of them as they can". Further EU directives will cause another round of plant closures by 2020, Varro says. What about the new coal plants in Germany? Eleven are due to come on stream by 2014, and figures provided to Inquirer yesterday by the German utility industry association showed another six plants on the drawing board or in the approval process. Coal's position in Germany has been helped by the government's decision to shut down its entire nuclear industry by 2022 in response to the near-disaster at Fukushima. Nuclear plants provided about one-quarter of Germany's total energy and half of its baseload, which will need to be replaced with new coal or gas supplies, given the intermittent nature of renewables.

#### Methane leaks inevitable

Common Dreams, 5-21-’12 (“Evidence Continues to Mount for Ticking 'Methane Time Bomb'” https://www.commondreams.org/headline/2012/05/21-3)

New research that utilized both ground-based measurements and aerial surveys in specific sub-arctic regions in Alaska and Greenland has discovered approximately 150,000 'methane seeps' - a phenomenon where methane gas previously held in the frozen permafrost beneath tundras or under arctic sea ice, is steadily released when warming causes melting. As more glaciers and permafrost melt, the effect could become even MORE severe. Methane is a potent greenhouse gas, second only to CO2, but the sheer amount of naturally existing methane -- some of it trapped under ground for hundreds or thousands of years -- would dwarf the impact of man-made emission levels if it was released at a rapid rate. This new research, performed by the the new Arctic project, led by Katey Walter Anthony from the University of Alaska at Fairbanks (UAF), and published in the journal Nature Geoscience suggests that the methane stores could have a dramatic and fast-occurring impact on overall global warming and runaway climate change. "The Arctic is the fastest warming region on the planet, and has many methane sources that will increase as the temperature rises," Prof Euan Nisbet from Royal Holloway, University of London, also involved in Arctic methane research but not with this project, told the BCC in an interview. "This is yet another serious concern: the warming will feed the warming."

\* \* \* BBC: Arctic melt releasing ancient methane Using aerial and ground-based surveys, the team identified about 150,000 methane seeps in Alaska and Greenland in lakes along the margins of ice cover. Local sampling showed that some of these are releasing the ancient methane, perhaps from natural gas or coal deposits underneath the lakes, whereas others are emitting much younger gas, presumably formed through decay of plant material in the lakes. "We observed most of these cryosphere-cap seeps in lakes along the boundaries of permafrost thaw and in moraines and fjords of retreating glaciers," they write, emphasizing the point that warming in the Arctic is releasing this long-stored carbon. "If this relationship holds true for other regions where sedimentary basins are at present capped by permafrost, glaciers and ice sheets, such as northern West Siberia, rich in natural gas and partially underlain by thin permafrost predicted to degrade substantially by 2100, a very strong increase in methane carbon cycling will result, with potential implications for climate warming feedbacks." Atmospheric methane concentration is rising again after a plateau of a few years Quantifying methane release across the Arctic is an active area of research, with several countries dispatching missions to monitor sites on land and sea. The region stores vast quantities of the gas in different places - in and under permafrost on land, on and under the sea bed, and - as evidenced by the latest research - in geological reservoirs. "The Arctic is the fastest warming region on the planet, and has many methane sources that will increase as the temperature rises," commented Prof Euan Nisbet from Royal Holloway, University of London, who is also involved in Arctic methane research. "This is yet another serious concern: the warming will feed the warming."

\* \* \* The Daily Mail: Methane unleashed from 150,000 'seeps' in Alaska and Greenland could have huge impact on world's climate In an accompanying News and Views article, Giuseppe Etiope writes 'The findings emphasize the potential significance of solid Earth geophysical processes to the atmospheric greenhouse gas budget.' It's already known that methane is being released into the atmosphere - both from the Siberian permafrost, and, as more recently discovered by survey ships, from the sea bed. 'We found more than 100 fountains, some more than a kilometer across,' said Dr Igor Semiletov, 'These are methane fields on a scale not seen before. The emissions went directly into the atmosphere.' Earlier research conducted by Semiletov's team had concluded that the amount of methane currently coming out of the East Siberian Arctic Shelf is comparable to the amount coming out of the entire world’s oceans. Now Semiletov thinks that could be an underestimate. The melting of the arctic shelf is melting 'permafrost' under the sea, which is releasing methane stored in the seabed as methane gas. These releases can be larger and more abrupt than any land-based release. The East Siberian Arctic Shelf is a methane-rich area that encompasses more than 2 million square kilometers of seafloor in the Arctic Ocean. 'Earlier we found torch or fountain-like structures like this,' Semiletov told the Independent. 'This is the first time that we've found continuous, powerful and impressive seeping structures, more than 1,000 meters in diameter. It's amazing.' 'Over a relatively small area, we found more than 100, but over a wider area, there should be thousands of them.' Semiletov's team used seismic and acoustic monitors to detect methane bubbles rising to the surface. Scientists estimate that the methane trapped under the ice shelf could lead to extremely rapid climate change. Current average methane concentrations in the Arctic average about 1.85 parts per million, the highest in 400,000 years. Concentrations above the East Siberian Arctic Shelf are even higher. The shelf is shallow, 50 meters or less in depth, which means it has been alternately submerged or above water, depending on sea levels throughout Earth’s history. During Earth’s coldest periods, it is a frozen arctic coastal plain, and does not release methane. As the planet warms and sea levels rise, it is inundated with seawater, which is 12-15 degrees warmer than the average air temperature. In deep water, methane gas oxidizes into carbon dioxide before it reaches the surface. In the shallows of the East Siberian Arctic Shelf, methane simply doesn’t have enough time to oxidize, which means more of it escapes into the atmosphere. That, combined with the sheer amount of methane in the region, could add a previously uncalculated variable to climate models.

#### New Artic methane leaks cause the impact

Buis, Jet Propulsion Laboratory, 4-22-’12 (Alan, “Study Finds Surprising Arctic Methane Emission Source” http://www.nasa.gov/topics/earth/features/earth20120422.html)

The fragile and rapidly changing Arctic region is home to large reservoirs of methane, a potent greenhouse gas. As Earth’s climate warms, the methane, frozen in reservoirs stored in Arctic tundra soils or marine sediments, is vulnerable to being released into the atmosphere, where it can add to global warming. Now a multi-institutional study by Eric Kort of NASA’s Jet Propulsion Laboratory, Pasadena, Calif., has uncovered a surprising and potentially important new source of Arctic methane: the ocean itself. Kort, a JPL postdoctoral scholar affiliated with the Keck Institute of Space Studies at the California Institute of Technology in Pasadena, led the analysis while he was a student at Harvard University, Cambridge, Mass. The study was conducted as part of the HIAPER Pole-to-Pole Observations (HIPPO) airborne campaign, which flew a specially instrumented National Science Foundation (NSF)/National Center for Atmospheric Research (NCAR) Gulfstream V aircraft over the Pacific Ocean from nearly pole to pole, collecting atmospheric measurements from Earth’s surface to an altitude of 8.7 miles (14 kilometers). The campaign, primarily funded by NSF with additional funding from NCAR, NASA and the National Oceanic and Atmospheric Administration, was designed to improve our understanding of where greenhouse gases are originating and being stored in the Earth system. During five HIPPO flights over the Arctic from 2009 to 2010, Kort’s team observed increased methane levels while flying at low altitudes over the remote Arctic Ocean, north of the Chukchi and Beaufort Seas. The methane level was about one-half percent larger than normal background levels. But where was the methane coming from? The team detected no carbon monoxide in the atmosphere that would point to possible contributions from human combustion activities. In addition, based on the time of year, location and nature of the emissions, it was extremely unlikely the methane was coming from high-latitude wetlands or geologic reservoirs. By comparing locations of the enhanced methane levels with airborne measurements of carbon monoxide, water vapor and ozone, they pinpointed a source: the ocean surface, through cracks in Arctic sea ice and areas of partial sea ice cover. The cracks expose open Arctic seawater, allowing the ocean to interact with the air, and methane in the surface waters to escape into the atmosphere. The team detected no enhanced methane levels when flying over areas of solid ice. Kort said previous studies by others had measured high concentrations of methane in Arctic surface waters, but before now no one had predicted that these enhanced levels of ocean methane would find their way to the overlying atmosphere. So how is the methane being produced? The scientists aren’t yet sure, but Kort hinted biological production from living things in Arctic surface waters may be a likely culprit. “It’s possible that as large areas of sea ice melt and expose more ocean water, methane production may increase, leading to larger methane emissions,” he said. He said future studies will be needed to understand the enhanced methane levels and associated emission processes and to measure their total contribution to overall Arctic methane levels. “While the methane levels we detected weren’t particularly large, the potential source region, the Arctic Ocean, is vast, so our finding could represent a noticeable new global source of methane,” he added. “As Arctic sea ice cover continues to decline in a warming climate, this source of methane may well increase. It’s important that we recognize the potential contribution from this source of methane to avoid falsely interpreting any changes observed in Arctic methane levels in the future.” The study, published April 22 in Nature Geoscience, included participation from JPL and Caltech; NSF, Arlington, Va.; NOAA’s Earth System Research Laboratory, Boulder, Colo.; the University of Colorado’s Cooperative Institute for Research in Environmental Sciences, Boulder; Harvard University, Cambridge, Mass.; Princeton University, Princeton, New Jersey; Universidad Nacional de Colombia, Bogota, Colombia; and Science and Technology Corporation, Boulder, Colo. JPL is a division of Caltech.