# Misc

## Resource Wars Impact

#### Resource wars cause extinction

Klare 6 (Michael T. Klare Ph.D, Professor of peace and world security studies at Hampshire University, “The Coming Resource Wars” http://www.alternet.org/story/33243/the\_coming\_resource\_wars, 3/10/2006)

It's official: the era of resource wars is upon us. In a major London address, British Defense Secretary John Reid warned that global climate change and dwindling natural resources are combining to increase the likelihood of violent conflict over land, water and energy. Climate change, he indicated, "will make scarce resources, clean water, viable agricultural land even scarcer" -- and this will "make the emergence of violent conflict more rather than less likely." Although not unprecedented, Reid's prediction of an upsurge in resource conflict is significant both because of his senior rank and the vehemence of his remarks. "The blunt truth is that the lack of water and agricultural land is a significant contributory factor to the tragic conflict we see unfolding in Darfur," he declared. "We should see this as a warning sign." Resource conflicts of this type are most likely to arise in the developing world, Reid indicated, but the more advanced and affluent countries are not likely to be spared the damaging and destabilizing effects of global climate change. With sea levels rising, water and energy becoming increasingly scarce and prime agricultural lands turning into deserts, internecine warfare over access to vital resources will become a global phenomenon. Reid's speech, delivered at the prestigious Chatham House in London (Britain's equivalent of the Council on Foreign Relations), is but the most recent expression of a growing trend in strategic circles to view environmental and resource effects -- rather than political orientation and ideology -- as the most potent source of armed conflict in the decades to come. With the world population rising, global consumption rates soaring, energy supplies rapidly disappearing and climate change eradicating valuable farmland, the stage is being set for persistent and worldwide struggles over vital resources. Religious and political strife will not disappear in this scenario, but rather will be channeled into contests over valuable sources of water, food and energy. Prior to Reid's address, the most significant expression of this outlook was a report prepared for the U.S. Department of Defense by a California-based consulting firm in October 2003. Entitled "An Abrupt Climate Change Scenario and Its Implications for United States National Security," the report warned that global climate change is more likely to result in sudden, cataclysmic environmental events than a gradual (and therefore manageable) rise in average temperatures. Such events could include a substantial increase in global sea levels, intense storms and hurricanes and continent-wide "dust bowl" effects. This would trigger pitched battles between the survivors of these effects for access to food, water, habitable land and energy supplies. "Violence and disruption stemming from the stresses created by abrupt changes in the climate pose a different type of threat to national security than we are accustomed to today," the 2003 report noted. "Military confrontation may be triggered by a desperate need for natural resources such as energy, food and water rather than by conflicts over ideology, religion or national honor." Until now, this mode of analysis has failed to command the attention of top American and British policymakers. For the most part, they insist that ideological and religious differences -- notably, the clash between values of tolerance and democracy on one hand and extremist forms of Islam on the other -- remain the main drivers of international conflict. But Reid's speech at Chatham House suggests that a major shift in strategic thinking may be under way. Environmental perils may soon dominate the world security agenda. This shift is due in part to the growing weight of evidence pointing to a significant human role in altering the planet's basic climate systems. Recent studies showing the rapid shrinkage of the polar ice caps, the accelerated melting of North American glaciers, the increased frequency of severe hurricanes and a number of other such effects all suggest that dramatic and potentially harmful changes to the global climate have begun to occur. More importantly, they conclude that human behavior -- most importantly, the burning of fossil fuels in factories, power plants, and motor vehicles -- is the most likely cause of these changes. This assessment may not have yet penetrated the White House and other bastions of head-in-the-sand thinking, but it is clearly gaining ground among scientists and thoughtful analysts around the world. For the most part, public discussion of global climate change has tended to describe its effects as an environmental problem -- as a threat to safe water, arable soil, temperate forests, certain species and so on. And, of course, climate change is a potent threat to the environment; in fact, the greatest threat imaginable. But viewing climate change as an environmental problem fails to do justice to the magnitude of the peril it poses. As Reid's speech and the 2003 Pentagon study make clear, the greatest danger posed by global climate change is not the degradation of ecosystems per se, but rather the disintegration of entire human societies, producing wholesale starvation, mass migrations and recurring conflict over resources. "As famine, disease, and weather-related disasters strike due to abrupt climate change," the Pentagon report notes, "many countries' needs will exceed their carrying capacity" -- that is, their ability to provide the minimum requirements for human survival. This "will create a sense of desperation, which is likely to lead to offensive aggression" against countries with a greater stock of vital resources. "Imagine eastern European countries, struggling to feed their populations with a falling supply of food, water, and energy, eyeing Russia, whose population is already in decline, for access to its grain, minerals, and energy supply." Similar scenarios will be replicated all across the planet, as those without the means to survival invade or migrate to those with greater abundance -- producing endless struggles between resource "haves" and "have-nots." It is this prospect, more than anything, that worries John Reid. In particular, he expressed concern over the inadequate capacity of poor and unstable countries to cope with the effects of climate change, and the resulting risk of state collapse, civil war and mass migration. "More than 300 million people in Africa currently lack access to safe water," he observed, and "climate change will worsen this dire situation" -- provoking more wars like Darfur. And even if these social disasters will occur primarily in the developing world, the wealthier countries will also be caught up in them, whether by participatin9g in peacekeeping and humanitarian aid operations, by fending off unwanted migrants or by fighting for access to overseas supplies of food, oil, and minerals. When reading of these nightmarish scenarios, it is easy to conjure up images of desperate, starving people killing one another with knives, staves and clubs -- as was certainly often the case in the past, and could easily prove to be so again. But these scenarios also envision the use of more deadly weapons. "In this world of warring states," the 2003 Pentagon report predicted, "nuclear arms proliferation is inevitable." As oil and natural gas disappears, more andmore countries will rely on nuclear power to meet their energy needs -- and this "will accelerate nuclear proliferation as countries develop enrichment and reprocessing capabilities to ensure their national security." Although speculative, these reports make one thing clear:when thinking about the calamitous effects of global climate change, we must emphasize its social and political consequences as much as its purely environmental effects. Drought, flooding and storms can kill us, and surely will -- but so will wars among the survivors of these catastrophes over what remains of food, water and shelter. As Reid's comments indicate, no society, however affluent, will escape involvement in these forms of conflict.

## Wind Power Bad – Warming

#### Wind turbines cause warming

Gray 12

[Louise, “Wind farms can cause climate change, finds new study”, The Telegraph, 4-29-12, http://www.telegraph.co.uk/earth/earthnews/9234715/Wind-farms-can-cause-climate-change-finds-new-study.html, javi]

Usually at night the air closer to the ground becomes colder when the sun goes down and the earth cools. But on huge wind farms the motion of the turbines mixes the air higher in the atmosphere that is warmer, pushing up the overall temperature. Satellite data over a large area in Texas, that is now covered by four of the world's largest wind farms, found that over a decade the local temperature went up by almost 1C as more turbines are built. This could have long term effects on wildlife living in the immediate areas of larger wind farms. It could also affect regional weather patterns as warmer areas affect the formation of cloud and even wind speeds. It is reported China is now erecting 36 wind turbines every day and Texas is the largest producer of wind power in the US. Liming Zhou, Research Associate Professor at the Department of Atmospheric and Environmental Sciences at the University of New York, who led the study, said further research is needed into the affect of the new technology on the wider environment. "Wind energy is among the world’s fastest growing sources of energy. The US wind industry has experienced a remarkably rapid expansion of capacity in recent years,” he said. “While converting wind’s kinetic energy into electricity, wind turbines modify surface-atmosphere exchanges and transfer of energy, momentum, mass and moisture within the atmosphere. These changes, if spatially large enough, might have noticeable impacts on local to regional weather and climate.” The study, published in Nature, found a “significant warming trend” of up to 0.72C (1.37F) per decade, particularly at night-time, over wind farms relative to near-by non-wind-farm regions.

## Nuclear Energy Bad – Terrorism

#### Nuclear power plants will increase terrorism – increase of terrorist nuclear capability

Rifkin 06

[Jeremy, “Nuclear Energy: Still a Bad Idea”, Common Dreams, 9-26-06, http://www.commondreams.org/views06/0929-33.htm, javi]

Fourth, building hundreds of nuclear power plants in an era of spreading Islamic terrorism seems insane. On the one hand the United States, the European Union and much of the world is frightened by the mere possibility that just one country — Iran — might use enriched uranium from its nuclear power plants for a nuclear bomb. On the other hand, many of the same governments are eager to spread nuclear power plants around the world, placing them in every nook and cranny of the planet. This means uranium and spent nuclear waste in transit everywhere and piling up in makeshift facilities, often close to heavily populated urban areas. Nuclear power plants are the ultimate soft target for terrorist attacks. On Nov. 8, 2005, the Australian government arrested 18 suspected Islamic terrorists who were allegedly plotting to blow up Australia's only nuclear power plant. The U.S. Nuclear Regulatory Commission found that more than half of the nuclear power plants in this country failed to prevent a simulated attack on their facilities. We should all be very worried. Finally, nuclear power represents the kind of highly centralized, clunky technology of a bygone era. In an age when distributed technologies are undermining hierarchies, decentralizing power and giving rise to networks and open-source economic models, nuclear power seems strangely old-fashioned and obsolete. To a great extent, nuclear power was a Cold War creation. It represented massive concentration of power and reflected the geopolitics of a post-World War II era. Today, however, new technologies are giving people the tools they need to become active participants in an interconnected world. Nuclear power, by contrast, is elite power, controlled by the few. Its resurrection would be a step backward.

#### Nuclear terrorism is an existential threat—it escalates to nuclear war with Russia and China.

Ayson 10

[Robert, Professor of Strategic Studies and Director of the Centre for Strategic Studies: New Zealand at the Victoria University of Wellington, “After a Terrorist Nuclear Attack: Envisaging Catalytic Effects,” Studies in Conflict & Terrorism, Volume 33, Issue 7, July 2010, Available Online to Subscribing Institutions via InformaWorld, javi]

A terrorist nuclear attack, and even the use of nuclear weapons in response by the country attacked in the first place, would not necessarily represent the worst of the nuclear worlds imaginable. Indeed, there are reasons to wonder whether nuclear terrorism should ever be regarded as belonging in the category of truly existential threats. A contrast can be drawn here with the global catastrophe that would come from a massive nuclear exchange between two or more of the sovereign states that possess these weapons in significant numbers. Even the worst terrorism that the twenty-first century might bring would fade into insignificance alongside considerations of what a general nuclear war would have wrought in the Cold War period. And it must be admitted that as long as the major nuclear weapons states have hundreds and even thousands of nuclear weapons at their disposal, there is always the possibility of a truly awful nuclear exchange taking place precipitated entirely by state possessors themselves. But these two nuclear worlds—a non-state actor nuclear attack and a catastrophic interstate nuclear exchange—are not necessarily separable. It is just possible that some sort of terrorist attack, and especially an act of nuclear terrorism, could precipitate a chain of events leading to a massive exchange of nuclear weapons between two or more of the states that possess them. In this context, today’s and tomorrow’s terrorist groups might assume the place allotted during the early Cold War years to new state possessors of small nuclear arsenals who were seen as raising the risks of a catalytic nuclear war between the superpowers started by third parties. These risks were considered in the late 1950s and early 1960s as concerns grew about nuclear proliferation, the so-called n+1 problem. It may require a considerable amount of imagination to depict an especially plausible situation where an act of nuclear terrorism could lead to such a massive inter-state nuclear war. For example, in the event of a terrorist nuclear attack on the United States, it might well be wondered just how Russia and/or China could plausibly be brought into the picture, not least because they seem unlikely to be fingered as the most obvious state sponsors or encouragers of terrorist groups. They would seem far too responsible to be involved in supporting that sort of terrorist behavior that could just as easily threaten them as well. Some possibilities, however remote, do suggest themselves. For example, how might the United States react if it was thought or discovered that the fissile material used in the act of nuclear terrorism had come from Russian stocks,40 and if for some reason Moscow denied any responsibility for nuclear laxity? The correct attribution of that nuclear material to a particular country might not be a case of science fiction given the observation by Michael May et al. that while the debris resulting from a nuclear explosion would be “spread over a wide area in tiny fragments, its radioactivity makes it detectable, identifiable and collectable, and a wealth of information can be obtained from its analysis: the efficiency of the explosion, the materials used and, most important … some indication of where the nuclear material came from.”41 Alternatively, if the act of nuclear terrorism came as a complete surprise, and American officials refused to believe that a terrorist group was fully responsible (or responsible at all) suspicion would shift immediately to state possessors. Ruling out Western ally countries like the United Kingdom and France, and probably Israel and India as well, authorities in Washington would be left with a very short list consisting of North Korea, perhaps Iran if its program continues, and possibly Pakistan. But at what stage would Russia and China be definitely ruled out in this high stakes game of nuclear Cluedo? In particular, if the act of nuclear terrorism occurred against a backdrop of existing tension in Washington’s relations with Russia and/or China, and at a time when threats had already been traded between these major powers, would officials and political leaders not be tempted to assume the worst? Of course, the chances of this occurring would only seem to increase if the United States was already involved in some sort of limited armed conflict with Russia and/or China, or if they were confronting each other from a distance in a proxy war, as unlikely as these developments may seem at the present time. The reverse might well apply too: should a nuclear terrorist attack occur in Russia or China during a period of heightened tension or even limited conflict with the United States, could Moscow and Beijing resist the pressures that might rise domestically to consider the United States as a possible perpetrator or encourager of the attack? Washington’s early response to a terrorist nuclear attack on its own soil might also raise the possibility of an unwanted (and nuclear aided) confrontation with Russia and/or China. For example, in the noise and confusion during the immediate aftermath of the terrorist nuclear attack, the U.S. president might be expected to place the country’s armed forces, including its nuclear arsenal, on a higher stage of alert. In such a tense environment, when careful planning runs up against the friction of reality, it is just possible that Moscow and/or China might mistakenly read this as a sign of U.S. intentions to use force (and possibly nuclear force) against them. In that situation, the temptations to preempt such actions might grow, although it must be admitted that any preemption would probably still meet with a devastating response. As part of its initial response to the act of nuclear terrorism (as discussed earlier) Washington might decide to order a significant conventional (or nuclear) retaliatory or disarming attack against the leadership of the terrorist group and/or states seen to support that group. Depending on the identity and especially the location of these targets, Russia and/or China might interpret such action as being far too close for their comfort, and potentially as an infringement on their spheres of influence and even on their sovereignty. One far-fetched but perhaps not impossible scenario might stem from a judgment in Washington that some of the main aiders and abetters of the terrorist action resided somewhere such as Chechnya, perhaps in connection with what Allison claims is the “Chechen insurgents’ … long-standing interest in all things nuclear.”42 American pressure on that part of the world would almost certainly raise alarms in Moscow that might require a degree of advanced consultation from Washington that the latter found itself unable or unwilling to provide. There is also the question of how other nuclear-armed states respond to the act of nuclear terrorism on another member of that special club. It could reasonably be expected that following a nuclear terrorist attack on the United States, both Russia and China would extend immediate sympathy and support to Washington and would work alongside the United States in the Security Council. But there is just a chance, albeit a slim one, where the support of Russia and/or China is less automatic in some cases than in others. For example, what would happen if the United States wished to discuss its right to retaliate against groups based in their territory? If, for some reason, Washington found the responses of Russia and China deeply underwhelming, (neither “for us or against us”) might it also suspect that they secretly were in cahoots with the group, increasing (again perhaps ever so slightly) the chances of a major exchange. If the terrorist group had some connections to groups in Russia and China, or existed in areas of the world over which Russia and China held sway, and if Washington felt that Moscow or Beijing were placing a curiously modest level of pressure on them, what conclusions might it then draw about their culpability? If Washington decided to use, or decided to threaten the use of, nuclear weapons, the responses of Russia and China would be crucial to the chances of avoiding a more serious nuclear exchange. They might surmise, for example, that while the act of nuclear terrorism was especially heinous and demanded a strong response, the response simply had to remain below the nuclear threshold. It would be one thing for a non-state actor to have broken the nuclear use taboo, but an entirely different thing for a state actor, and indeed the leading state in the international system, to do so. If Russia and China felt sufficiently strongly about that prospect, there is then the question of what options would lie open to them to dissuade the United States from such action: and as has been seen over the last several decades, the central dissuader of the use of nuclear weapons by states has been the threat of nuclear retaliation. If some readers find this simply too fanciful, and perhaps even offensive to contemplate, it may be informative to reverse the tables. Russia, which possesses an arsenal of thousands of nuclear warheads and that has been one of the two most important trustees of the non-use taboo, is subjected to an attack of nuclear terrorism. In response, Moscow places its nuclear forces very visibly on a higher state of alert and declares that it is considering the use of nuclear retaliation against the group and any of its state supporters. How would Washington view such a possibility? Would it really be keen to support Russia’s use of nuclear weapons, including outside Russia’s traditional sphere of influence? And if not, which seems quite plausible, what options would Washington have to communicate that displeasure? If China had been the victim of the nuclear terrorism and seemed likely to retaliate in kind, would the United States and Russia be happy to sit back and let this occur? In the charged atmosphere immediately after a nuclear terrorist attack, how would the attacked country respond to pressure from other major nuclear powers not to respond in kind? The phrase “how dare they tell us what to do” immediately springs to mind. Some might even go so far as to interpret this concern as a tacit form of sympathy or support for the terrorists. This might not help the chances of nuclear restraint.

## Coal Bad – Warming

#### Coal is a major cause of global warming

Greenpeace no date

[http://www.greenpeace.org/usa/en/campaigns/global-warming-and-energy/coal/, javi]

Global warming is a clear and present danger to America's public health, economy, and environment. One record-breaking hurricane season follows another. Declining mountain snowpack is aggravating water shortages in the West. California's destructive wildfire season has become longer and more destructive than ever before. This is what global warming looks like. Coal is the most polluting of all fossil fuels and the largest single source of global warming pollution in the world. Currently one-third of all CO2 emissions comes from burning coal. To curb global warming pollution to the levels needed to minimize the risk of catastrophic global warming, we must end our use of coal in the U.S. within the next 30-40 years. Unfortunately, governments around the world are allowing, and in some cases subsidizing, the construction of hundreds of new coal-fired power plants. If these plants are built, CO2 emissions from coal are expected to rise 60 percent by 2030, severely undermining efforts to tackle climate change. Here in the U.S., according to a Coal Moratorium NOW! survey, nearly 100 coal plants are currently under construction or in the planning process. Coal is NOT Clean After multi-million-dollar PR campaigns by the coal industry, many in government have become seduced by the illusion of “carbon-free coal.” The industry wants Americans to believe that coal can be made safe for the environment by capturing and permanently storing the global warming pollution. This technology, Carbon, Capture and Storage (CCS) is a false hope. Despite tens of billions in public subsidies, it has never been made to work. The idea that the same coal industry that spilled enormous amounts of coal ash sludge last December in Tennessee will be able to permanently store billions of tons of a clear, odorless gas with no leakage is hard to imagine, to say the least. Yet vague promises of CCS are being used to justify building new coal-fired plants. But any new coal-fired power plant will contribute massively to the climate crisis.

#### Coal is a major contributor of oil

Macalister 6-13

[Terry, “Coal's resurgence undermines fight against global warming”, Guardian, 6-12-12, http://www.guardian.co.uk/environment/2012/jun/13/coal-resurgence-global-warming, javi]

Coal has carved itself a 30% share of the global energy market - its highest level in over 40 years - undermining attempts by governments to reduce their carbon emissions, new figures show. China and India both increased their use of carbon-heavy coal by over 9% but Europe, where political consensus against global warming is strongest, also saw a 4% increase, according to the BP Statistical Review of World Energy. Christof Ruhl, BP's chief economist presenting the figures in London on Wednesday said industrialisation of developing countries and cheap prices were driving coal demand which had "profound implications" for CO2 output. The increased use of coal and a continued heavy use of other fossil fuels such as oil and gas led to a 3% increase in world carbon emissions from energy in 2011, a lower rate than in 2010, the statistics show. Ruhl said concerns about climate change seemed to have been parked to one side as a "sense of frustration" had set in over the difficulties of finding a quick and easy solution to global warming.

#### Left unchecked, warming will cause extinction

Sify 2010

[Sydney newspaper citing Ove Hoegh-Guldberg, professor at University of Queensland and Director of the Global Change Institute, and John Bruno, associate professor of Marine Science at UNC (Sify News, “Could unbridled climate changes lead to human extinction?”, http://www.sify.com/news/could-unbridled-climate-changes-lead-to-human-extinction-news-international-kgtrOhdaahc.html]

The findings of the comprehensive report: 'The impact of climate change on the world's marine ecosystems' emerged from a synthesis of recent research on the world's oceans, carried out by two of the world's leading marine scientists. One of the authors of the report is Ove Hoegh-Guldberg, professor at The University of Queensland and the director of its Global Change Institute (GCI). 'We may see sudden, unexpected changes that have serious ramifications for the overall well-being of humans, including the capacity of the planet to support people. This is further evidence that we are well on the way to the next great extinction event,' says Hoegh-Guldberg. 'The findings have enormous implications for mankind, particularly if the trend continues. The earth's ocean, which produces half of the oxygen we breathe and absorbs 30 per cent of human-generated carbon dioxide, is equivalent to its heart and lungs. This study shows worrying signs of ill-health. It's as if the earth has been smoking two packs of cigarettes a day!,' he added. 'We are entering a period in which the ocean services upon which humanity depends are undergoing massive change and in some cases beginning to fail', he added. The 'fundamental and comprehensive' changes to marine life identified in the report include rapidly warming and acidifying oceans, changes in water circulation and expansion of dead zones within the ocean depths. These are driving major changes in marine ecosystems: less abundant coral reefs, sea grasses and mangroves (important fish nurseries); fewer, smaller fish; a breakdown in food chains; changes in the distribution of marine life; and more frequent diseases and pests among marine organisms. Study co-author John F Bruno, associate professor in marine science at The University of North Carolina, says greenhouse gas emissions are modifying many physical and geochemical aspects of the planet's oceans, in ways 'unprecedented in nearly a million years'. 'This is causing fundamental and comprehensive changes to the way marine ecosystems function,' Bruno warned, according to a GCI release. These findings were published in Science

## Natural Gas Bad

#### Natural gas emits greenhouse gases – production is very dirty

Gardiner 11

[Beth Gardiner, “Is Natural Gas Good, or Just Less Bad?”, The New York Times, 2-22-11, http://www.nytimes.com/2011/02/21/business/energy-environment/21iht-renogas21.html, javi]

Natural gas is billed by its supporters, including President Barack Obama, as a clean fuel that could play a big role in a low-carbon future. But others are questioning the environmental credentials of an energy source that, while easier on the atmosphere than coal and oil, is still a fossil fuel that causes sizable emissions of climate-warming gases. Its backers say it emits only half as much carbon as coal when burned, and some environmentalists agree that it could bridge the gap until cleaner sources slowly come into use. But opponents see the push for natural gas as a distraction from more pressing priorities, like improving efficiency and generating renewable power. “We really have to be quite careful about the language we use to frame things,” said Kevin Anderson, a professor at the Tyndall Center for Climate Change Research at the University of Manchester in England. “If we call things green, we start to feel positive about it.” Natural gas, he said, “is not a positive thing, it’s just less negative.” In fact, he called it “a very bad fuel,” with “very high emissions indeed.” “They’re not as high as some other fossil fuels, but given where we need to be, to compare it with the worst that’s out there is very dangerous,” he added. Others are less critical. The Natural Resources Defense Council, an influential environmental group based in New York, wants to see U.S. coal plants converted to natural gas, said Kate Sinding, a senior attorney with the council. Reducing energy demand and promoting renewables come first, she said, “but we do see that as we get there, there is inevitably going to be a role for natural gas to play.” In addition to the carbon dioxide savings, natural gas also emits far lower levels of pollutants like nitrogen and sulfur oxides, mercury and particulate matter. Eventually, Ms. Sinding said, natural gas plants could be paired with solar and wind farms, which generate intermittent supply and need backup. Still, even if gas burns more cleanly than coal and oil, its production is often so dirty that it undermines the environmental gains, she said. U.S. and state regulators must tighten rules that have failed to reduce the serious problem of methane leaks and protect the quality of air and drinking water, Ms. Sinding said. Natural gas is composed largely of methane, which, if leaked unburned, is a powerful greenhouse gas. Also, poorly built gas wells can contaminate nearby aquifers. “In theory it can be reasonable, but we’re just falling far short of what we need to be doing for it to realize its promise,” she said.

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Sify 2010

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## Electric Cars

#### Electric car production causes pollution and warming

The Week 11

[“Are electric cars actually bad for the environment?”, The Week, 6-14-11, http://theweek.com/article/index/216263/are-electric-cars-actually-bad-for-the-environment, javi]

Production of electric cars is speeding up, as Ford prepares to introduce its C-Max Energi next year to compete with General Motors' much-hyped Chevrolet Volt. But a new British study suggests that electric vehicles might not be as green as environmentalists think. Because of pollution from the factories that make batteries, an electric car has a bigger carbon footprint than a gas-burning vehicles until it's traveled 80,000 miles, according to the research, which was financed by the Low Carbon Vehicle Partnership. Does this mean electric cars aren't good for the planet after all? Yes, these vehicles are bad for the environment: Electric cars just aren't "a green option," says Ed Morrissey at Hot Air. "Not only do electric vehicles produce just as much carbon in their overall cycle as internal-combustion engines, the need to replace the batteries actually makes them less green than current technology." If we want a cleaner way to get around, "the answer is natural gas, not electric vehicles."

## a/t: Oil Disads

### 2ac Non-Unique

#### US oil imports have gone down considerably since 2005

Avro 3-27 – Samuel, Founder & Sr. Editor of Consumer Energy Report, “U.S. Crude Oil Imports Down 12% Since 2005”, Consumer Energy Report, 3-27-12, <http://www.consumerenergyreport.com/2012/03/27/u-s-crude-oil-imports-down-12-since-2005/>]

U.S. crude oil imports have fallen to their lowest level since 1999, according to data provided by the U.S. Energy Information Administration (EIA), an arm of the U.S. Department Of Energy (DOE). Crude oil imports for 2011 averaged 8.9 million barrels per day (bbl/d), falling below the 9 million bbl/d mark for the first time since 1999, and down 12 percent since hitting a peak of 10.1 million bbl/d in 2005. Increased Domestic Production, Lower Demand, or Both? The contributing factors to the steady drop in U.S. crude oil imports are decreased consumption and a recent increase in domestic oil production, according to the EIA. “Purchases of imported crude oil have declined because U.S. refiners had more supplies from domestic crude production to use, particularly higher oil output from Texas and North Dakota’s Bakken formation,” the EIA said. “Texas oil production last year reached its highest level since 1997, and North Dakota appears to have pushed past California in December as the third biggest oil producing state.” “The increased production trend is attributable primarily to a sustained period of high prices, and vast improvements in technology to find and bring oil to market,” Tom Kloza, chief oil analyst for the Oil Price Information Service (OPIS), told Consumer Energy Report. “The lower demand is a bit more puzzling. Some of it relies on a more efficient fleet, but turning over the fleet is a process that moves at a glacial pace. Something else is afoot in the last six months — my hunch is that there is a more secular change in travel, both for work and for leisure.”

### 2ac Diversification

#### Oil exporting countries are diversifying their economies now – solves the impact

**VOA, ’09** - official external broadcast institution of the United States federal government; one of five civilian U.S. international broadcasters (Voice of America, “Oil Producing Countries Working to Diversify their Economies”, 10/31/09, [http://www.voanews.com/content/a-13-2006-05-04-voa61/398257.html)//AY](http://www.voanews.com/content/a-13-2006-05-04-voa61/398257.html%29//AY)

 *Record oil prices are providing key Middle Eastern oil producers with the financial means to diversify their economies in an effort to reduce their dependence on petroleum.*

The oil booms of the late 1970s and early '80s left oil producing Middle Eastern countries awash in money. Billions of petrodollars were spent on unsustainable domestic projects, such as Saudi Arabia's massive spending on agriculture to become the world's sixth-largest producer of wheat. When oil prices collapsed, the government ran out of money and the project failed.

But the lessons of the past have not been lost on Riyadh or other members of the Gulf Cooperation Council, or G.C.C. Qatar, Bahrain, Oman, Kuwait and the United Arab Emirates, or U.A.E., also belong to the G.C.C. and, along with Saudi Arabia, possess 40 percent of the world's oil reserves.

**Lessons of the Past**

Mohsin Khan, Director of the Middle East and Central Asia Department at the International Monetary Fund, or I.M.F. in Washington, says these nations have curbed spending despite record oil revenues, projected to rise from $200 billion in the last two years to more than $350 billion for this year alone. He says, "They learned their lessons from the 1970s and '80s and are being much more cautious in terms of spending, much more cautious in terms of what they're predicting for oil prices. In other words, they're treating the oil price increase as temporary. They don't want to get trapped into large-scale, major government financed projects that, later on, if oil prices were to fall, would [leave them] with projects that are not economically viable."

In the 1970s and '80s, governments in oil producing Middle Eastern nations spent up to 80 percent of their oil revenues on unsustainable development projects. This year, G.C.C. governments drew up their budgets based on oil selling for $30 per barrel. With an eye toward the future, these nations now save two-thirds of their oil revenues and spend the rest to diversify their economies away from oil, according to the I.M.F.'s Mohsin Khan.

"There are two big changes," says Khan. "One is that they're not spending as much. And two, what are they doing with their savings? In the 1970s, they were basically saving it in the form of financial assets in banks in the United States or in Europe. Now they're diversifying quite a bit and a lot more of the money is staying in the region."

**Where the Money Goes**

So where is the money going? Many analysts say a new breed of investors from the region is on the lookout for investment opportunities abroad. At the same time, much of the money is being spent on education, tourism, training and new economic sectors meant to enhance privatization and create new jobs. Bahrain, for example, has developed into a major financial center that employs more Bahrainis than expatriates, who have a very strong presence in the Persian Gulf region.

But Marcus Noland, Senior Fellow at the Institute for International Economics in Washington says success has been mixed, depending on each country's strengths and resources. He says, "Some, such as Saudi Arabia, have emphasized diversifying downstream by producing petrochemicals, plastics and so on. And those industries are expanding. Other [oil] producers, such as some of the smaller states along the Gulf, like the U.A.E., have emphasized moving into services - - whether financial services or, in the case of Dubai, obviously transportation services and, to a certain degree, tourism."

Saudi Arabia has also opened up domestic trade and investment opportunities, which are expected to be worth more than $600 billion during the next few years.  And the President of the National U.S.-Arab Chamber of Commerce in Washington, David Hamod says many of these projects are not in petrochemicals. He says, "You see U.S. companies like Cisco [Arial Unicode MS,Arial,Verdanas], Intel, I.B.M. and others now investing millions and millions of dollars in some of the biggest markets, like Saudi Arabia, where they see tremendous growth in the service sector. And as people begin to diversify their economies in the region, they recognize that services are an important part of the future."

Qatar, meanwhile, has used its oil revenues to expand its petrochemical industries and develop new avenues for training and educational opportunities for its people. In Oman, the government is overhauling the country's financial institutions and privatizing more of its economy.

# Aff – Oil Dependence

## Impact Scenarios

### Economy Impact

**Oil price fluctuations lead to recessions and kill the economy – even a strong dollar hegemony can’t solve**

**Gagan, 10** - MASTER OF MILITARY ART AND SCIENCE Homeland Security; MAJ, U.S.ARMY B.S. Criminal Justice, East Carolina University (John, “THE UNITED STATES’ STRATEGIC INSECURITY-THE OIL NEXUS”, 11/06/10, [http://www.dtic.mil.proxy.lib.umich.edu/dtic/tr/fulltext/u2/a531222.pdf)//AY](http://www.dtic.mil.proxy.lib.umich.edu/dtic/tr/fulltext/u2/a531222.pdf%29//AY)

The cost of foreign imported oil is high in terms of national economic security. “Oil price shocks and price manipulation by OPEC have cost our economy dearly--about $1.9 trillion from 2004 to 2008--and each major shock was followed by a recession” (www.fueleconomy.gov). In 2008 the U. S. imported nearly $354 billion worth of oil. In July of 2008, oil broke a record high when it was traded at $147.27 a barrel on the stock exchange. As U.S. reliance on imported oil continues to grow, so does its economic

vulnerability. As mentioned previously in this chapter, the economic risk associated with loss of oil access is the most probable and most dangerous to the U.S. This problem is exacerbated by supply and demand; when global oil demand increases, global competition for that oil increases, which in turns raises the price of oil which could

### China Resource Wars Impact

#### Oil dependence means competing with China – leads to China and resource wars

**Gagan, 10** - MASTER OF MILITARY ART AND SCIENCE Homeland Security; MAJ, U.S.ARMY B.S. Criminal Justice, East Carolina University (John, “THE UNITED STATES’ STRATEGIC INSECURITY-THE OIL NEXUS”, 11/06/10, [http://www.dtic.mil.proxy.lib.umich.edu/dtic/tr/fulltext/u2/a531222.pdf)//AY](http://www.dtic.mil.proxy.lib.umich.edu/dtic/tr/fulltext/u2/a531222.pdf%29//AY)

To meet its demand for oil, China is engaged in an aggressive global hunt to secure its sources of energy. In addition to receiving imports from the Middle East, China has oil agreements in place with, Iran, Sudan, Burma, Venezuela and most recently Russia. Furthermore, China is engaging energy producers that have traditionally, almost exclusively, supplied oil to the U.S., specifically Canada. In 2005, China signed three agreements with Canada to gain access to Alberta’s oil sands and join a pipeline project to transport oil to the Pacific coast for export to China (San Francisco Chronicle).China’s aggressive pursuit of oil has raised energy security concerns in Asia. Smaller countries such as Singapore and Vietnam are worried that China’s dominance in the region could pose security issues for contested or disputed areas of oil discovery. Some analysts contend that the U.S. and China are on a collision course over resource competition. As mentioned in chapter 1, the current resource competition for oil can be likened to a West verses East effort to build coalitions and forge alliances in securing access to oil supplies. This could create a friction point between the U.S. and China, especially since China openly seeks trade relations with nations with whom the U.S. is at odds including Iran and Venezuela. Another potential U.S.-China flashpoint is on the continent of Africa (Institute for the Analysis of Global Security). In 2004, approximately 29 percent of China’s oil imports were from Africa. Currently, China is vigorously pursuing energy initiatives in more than a dozen African countries (Ghazvinian, 276).

### Middle East Impact

#### Oil dependence forces U.S. intervention in the Middle East – leads to instability and war

**Cavell, ’12** - Ph.D., Adjunct Professor @ Holyoke College; University of Bahrain American Studies Center & former lecturer; specializes in political theory; international relations & law, American foreign policy, and political economy (Colin, “America’s Dependency on Middle East Oil”, Global Research, 4/11/12, http://www.globalresearch.ca/PrintArticle.php?articleId=30177)//AY

Though the U.S. is a top producer of crude oil, its current rate of petroleum consumption is between 18 and 19 million barrels of oil per day, and its domestic production cannot handle the demand, hence its reliance on imported oil.  As President George W. Bush stated in his 2006 State of the Union Address to the nation:  “Keeping America competitive requires affordable energy.  And here we have a serious problem:  America is addicted to oil, which is often imported from unstable parts of the world” (January 31, 2006).  From the mouth of the nation’s top leader, the U.S. suffers from an *addiction*.  Most modern machinery runs on oil and its utility is seen in everyday products from plastics to cosmetics, from paint to lubricants, and, most especially, as a source of fuel for the modern combustion engine.  Over time, to feel “normal”, the addict develops an abnormal psychological dependency on the addictive substance and will utilize any means to obtain the drug in spite of cultural or moral restraints.  In the case of oil, this abnormal dependency has led the United States to engage in bribery and corruption to obtain oil, from control of markets to the exclusion of countries from such commerce, from the overthrow of regimes deemed belligerent because of their attempts to take control of their own oil resources to outright murder, assassination, and war.  Indeed, few Americans today doubt that the recent eight-year war on Iraq (2003-2011) was conducted primarily to obtain oil.  And this is why veteran scholar on the politics of oil, Dr. Michael Klare, concludes in a recent article that:  “the Strait of Hormuz will undoubtedly remain the ground zero of potential global conflict in the months ahead” (January 31, 2012).

When a U.S. President refers to the necessity to import oil from “unstable parts of the world,” what he means is that some regions of the world are asserting their sovereign right to control their natural resources, e.g. oil, and they are neither subordinate nor answerable to the U.S. government, especially as regards how much oil is produced and available for purchase on world markets and how much they wish to charge for this oil—hence, the nomenclature of “instability”.

### War/Terror Impact

#### U.S. oil dependence leads to nuclear war and terrorism – Middle East leaders view oil dependency as leverage over the U.S.

**Cohen, ’07** – Ph.D., The Fletcher School of Law and Diplomacy, Tufts/Harvard, Medford,MA; course work at the Kennedy Schoold of Government; Harvard Law School, and the Faculty of Arts and Sciences.Master of Arts, Law and Diplomacy (MALD), The Fletcher School of Law and Diplomacy, including course work at Harvard University, Cambridge, MA.Graduate, Law (L.L.B.) Bar Ilan University School of Law (Israel). Minor Concentrations: International Relations and Political Science; SeniorResearch Fellow for Russian and Eurasian Studies and International Energy Policy, The Kathryn and Shelby Cullom Davis Institute for International Studies (Ariel, “The National Security Consequences of Oil Dependency”, Heritage Foundation, 5/14/07, [http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency)//AY](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%29//AY)

In his 2006 State of the Union address, President George W. Bush said, "[W]e have a serious problem: America is addicted to oil, which is often imported from unstable parts of the world."[[2]](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%22%20%5Cl%20%22_ftn2%22%20%5Co%20%22) Recognizing the problem is laudable; however, relatively little has been done to solve it. There is a broad consensus in America, from the President to the man on the street, that the current situation is detrimental to the country's economic health.

The world, both developed and developing, is dependent on unstable or otherwise inhospitable regions for its oil supply. This social and political instability characterizes all of the major oil provinc­es: the Middle East, Venezuela, and Africa. Russia presents a separate set of issues which will be dealt with below. Dealing with security and political factors limiting the development of oil and gas production needs to be a high priority for any Administration--Republican or Democrat. This is particularly challenging because there are so many moving parts in this complex system.One of the most important avenues for dealing with the oil shortage is through conservation. Another is developing substitute and alternative fuels, such as ethanol, methanol, and gas-to-liquid. Higher oil prices are likely to dictate new engine and car designs that will work more efficiently and/ or run on different fuels. The plug-in hybrids and other technological breakthroughs may eventually wean the world from the internal combustion engine and oil dependence. However, such techno­logical and structural transformations are, like many things, likely to take longer than many expect, are certain to require massive investments, and are beyond the scope of this testimony.

For the near term, let us focus on the principal avenues of securing our oil supply, which include:

Deterring anti-status quo players, such as Iran, Venezuela, and the global radical Islamist  movement with its terrorist organizations;

Cooperating with local governments to enhance the protection of critical shipping choke points, such as the Suez Canal, the Bosporus, Bab-el-Mandeb, the Strait of Hormuz, the Strait of Mal­acca, etc., and developing contingency plans for sea-borne terrorism/piracy aimed at tanker ships;

Boosting an international coalition of oil con­sumers by bringing aboard India, China and other major emerging markets, such as Brazil and Turkey; and

Securing open access and a level playing field for international oil companies and national oil companies. Specifically, consumer countries should make as their top foreign policy priori­ties openness of investment regimes; stable, predictable, and transparent energy regulatory systems based on the rule of law in producing countries; and fighting corruption.

The Middle East

The Middle East's Persian Gulf is the richest and most important oil province in the world. Forty per­cent of the daily shipment of oil passes through the Gulf. Approximately 20 percent of U.S. oil comes from the Gulf.

Currently, the security and stability of Middle East oil is threatened by ongoing conflicts in Iraq; an aggressive and nuclear Iran; and radical Islamist movements, with their terrorist arms, whose goals include toppling regimes throughout the Gulf, including the swing producer of oil, Saudi Arabia.Islamist movements, nurtured to a great extent by oil revenues from Gulf states, aim to eventually create a global Islamic empire--the Caliphate. These movements ultimately strive to subjugate and convert non-Islamic countries to their brand of Islam. This is a very long-term project, and ulti­mately, it will hopefully be a futile one. However, in the meantime, the existence and the goals of these movements pose an immediate threat to the securi­ty of some of the most crucial sectors of the world oil supply.

Sellers' Market. Today's global oil market is operating without the benefit of additional produc­tion capacity or significant strategic petroleum reserves beyond the U.S. reserves. The Saudi spare capacity has deteriorated over the past decade by one-half, from 3-4 mbd to 1-1.5 mbd. To make matters worse, some experts question reserve esti­mates provided by national oil companies in the Gulf and elsewhere, as these numbers are not inde­pendently audited. Without a clear understanding of how much oil is available, the world may be up for more nasty surprises.Terrorist attacks that have been carried out to date on the oil infrastructure have clearly caught oil producers unprepared. For example, al-Qaeda's February 24, 2005, attack on the Aramco facility in Abqaiq, Saudi Arabia, sent shock waves through the world's financial markets. On the same day, the price of oil on international markets jumped nearly $2 per barrel, despite the attack's complete failure (the terrorists and two security guards were killed.)[[3]](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%22%20%5Cl%20%22_ftn3%22%20%5Co%20%22)Most analysts agree that the February attack, an additional attempt on March 28, 2005, and a 9/11-style assault in April 2007, all of which were suc­cessfully averted, were merely trial runs in a much longer campaign designed to disrupt the global economy in general, and the oil and gas industry in particular.[[4]](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%22%20%5Cl%20%22_ftn4%22%20%5Co%20%22) As the September 11, 2001, World Trade Center attacks demonstrated, al-Qaeda tends to return to the scene of the crime, so another strike on Abqaiq and other oil targets is likely. Both Osama bin Laden and Ayman al-Zawahiri have repeatedly called for attacks on key Western eco­nomic targets, especially energy sources.[[5]](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%22%20%5Cl%20%22_ftn5%22%20%5Co%20%22) In a tape aired by Al-Jazeera in February 2006, Zawahiri said:

I call on the mujahideen to concentrate their attacks on Muslims' stolen oil, most of the rev­enues of which go to the enemies of Islam while most of what they leave is seized by the thieves who rule our countries*.**[[6]](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%22%20%5Cl%20%22_ftn6%22%20%5Co%20%22)*

The unfortunate reality is that the Middle East remains the strategic center of gravity of the global oil market--a position that is not likely to change in the medium term. As long as radical Islamists, China, Russia, India, and Europe continue the struggle for the world's limited oil supply, the region will remain unstable. If the U.S. is to protect itself from these economic and political threats, it must use all the tools at its disposal to protect energy assets around the globe, while decreasing the world's dependence on Middle Eastern oil as quick­ly and efficiently as possible.Oil as a Weapon. Many Arab leaders understand the dynamic of the world's oil dependence. For example, as early as 1990, the late Yassir Arafat said:

When the North Sea oil dries up in 1991, the United States will want to buy Arab petro­leum. And when the American oil fields them­selves run dry and oil consumption in the United States increases, the American need for the Arabs will grow greater and greater.[[7]](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%22%20%5Cl%20%22_ftn7%22%20%5Co%20%22)

This observation has not been lost on the cur­rent generation of politicians and terrorist leaders. However, bin Laden and Zawahiri are not satisfied with the unwieldy weapons of oil boycotts and buying political influence in the West. Instead, they are clearly zeroing in on the oil-rich kingdoms of Saudi Arabia and the Persian Gulf as their principal targets. They also appear increasingly interested in attacking the entire global oil industry, from wells to wheels.The failed February 2005 strike and the prevent­ed March 2005 attack on Abqaiq, mentioned earlier, were not the first times that al-Qaeda has targeted energy assets in the region. In October 2002, al-Qaeda attacked the *Limbourg*, a French oil tanker, off the coast of Yemen with a suicide boat filled with explosives. In 2002, American and Saudi intelli­gence agencies uncovered a plot by al-Qaeda sym­pathizers inside Saudi Aramco to destroy key Saudi oil facilities. In 2003-2004, al-Qaeda attacked the Saudi port of Yanbu and murdered five Western engineers working there.[[8]](http://www.heritage.org/research/lecture/the-national-security-consequences-of-oil-dependency%22%20%5Cl%20%22_ftn8%22%20%5Co%20%22) Some analysts have warned that a carefully target­ed terrorist attack on oil facilities in Saudi Arabia could reduce Saudi oil production to 4 million bar­rels per day or less for up to three months, which would have disastrous results for the global economy.

### Exts – Terror Impact

#### Oil dependence causes terrorists attacks – infrastructure vulnerabilities

**Gagan, 10** - MASTER OF MILITARY ART AND SCIENCE Homeland Security; MAJ, U.S.ARMY B.S. Criminal Justice, East Carolina University (John, “THE UNITED STATES’ STRATEGIC INSECURITY-THE OIL NEXUS”, 11/06/10, [http://www.dtic.mil.proxy.lib.umich.edu/dtic/tr/fulltext/u2/a531222.pdf)//AY](http://www.dtic.mil.proxy.lib.umich.edu/dtic/tr/fulltext/u2/a531222.pdf%29//AY)

Recognizing the strategic importance of oil to the U.S., oil supply vulnerability can and has been targeted by extremist groups in an attempt to disrupt oil supplies. There are four critical stages that all oil must pass from well to consumer, each with their own unique vulnerabilities and security challenges that must be understood in order to protect them from terrorist attacks: (Goslin 2008).

First, are the oil wells and platforms. Well heads are comprised of a series of complex valve assemblies which are used to pump oil from the ground. Usually, these wellheads are located in remote regions that make them susceptible to sabotage by damaging or disabling any of the pumping mechanisms and rendering them inoperable. Similarly, oil platforms are essentially wellheads in bodies of water such as the Gulf of Mexico and the Atlantic Ocean where they are vulnerable to water and aerial terrorist attack (Mammoth Resource Partners, Inc.)

The next critical stage in oil production is the transportation of raw crude oil for processing. Oil is transported from wells to storage areas primarily either through pipeline networks or by tanker ships, both of which are highly susceptible to terrorist attacks. The U.S. oil production industry is connected by a vast pipeline network, much 43 of which is exposed above ground. Domestically, the 800 mile-long Alyeska Pipeline, which transports nearly one million barrels of oil per day oil from Alaska’s North Slope to Valdez for shipping and provides most of the oil to the Western U.S. is highly vulnerable to terrorist attack. Although to date there have been no attacks on the miles of exposed pipeline, its remoteness and its importance to the U.S. make it an excellent target for terrorist attack. Saudi Arabia’s 10,000 miles of mostly exposed oil pipelines, the Suez regions’ Sumed Pipeline that transports two million barrels of oil per day, and the Caspian Sea’s Baku-Tbilisi-Ceyhan pipeline are vulnerable to terrorist attack and would create significant shortages of oil worldwide if disabled (Mammoth Resource Partners, Inc.).

Just as vulnerable to terrorist attack are the oil tankers and their sea routes used to transport oil to refineries. Operating alone and unarmed over vast miles of global waterways, oil tankers are susceptible to water and aerial attacks, hijackings, and pirating. Somali pirates threatened to blow up the Korean oil tanker Samho Dream unless a ransom of $2 million was paid. The Samho Dream was hi-jacked in the early morning hours of 4 April 2010, carrying 2 million barrels of oil.

#### Oil dependence fuels terrorism – provides money to dangerous countries

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Today, despite more than 50 years of government-sponsored programs, U.S. consumption and importation of oil from foreign countries have increased steadily. The American government has done almost nothing to deal with the central problem of dependence on oil, and especially dependence on insecure sources of foreign oil. In fact, the United States tripled its oil imports from 1985 to 2008, while domestic production fell by nearly 50 percent. In his testimony before United States Senate Environment and Public Works Committee in 2009, Retired U.S. Navy Vice Admiral DennyMcGinn noted: ―In 2008, we sent $386 billion overseas to pay for oil—much of it going to nations that wish us harm. This is an unprecedented and unsustainable transfer of wealth to other nations. It puts us in the untenable position of funding both sides of conflict and directly undermines our fight against terror.‖ Much of America‘s oil dependency relies on imports from unstable parts of the world. One in five barrels of U.S. oil comes from countries that the State Department considers to be ―dangerous or unstable ‖(Lyon, Lefton, and Weiss).

America is buying billions of dollars of oil from Middle East, a region that is swept by political turmoil. ―American overdependence on oil has led to a hapless foreign policy in the Arab world,argued Thomas D. Kraemer of the Strategic Studies Institute at the U.S.Army War College. The CNA Military Advisory Board‘s report in May 2009 entitled ―Powering America‘s Defense: Energy and the Risks to National Security,‖ concluded that ―U.S. dependence on oil weakens international leverage, undermines foreign policy objectives, and entangles America with unstable or hostile regimes. As the Council of Foreign Relations warned: ―major energy consumers—notably the United States, but other countries as well—are finding that their growing dependence on imported energy increases their strategic vulnerability and constrains their ability to pursue a broad range of foreign policy and national security objectives (Deutch and Schlesinger). For example, Iran is using oil revenues to finance development of nuclear weapons and to insulate themselves from the economic sanctions that could result. In order to ensure the steady supply of oil from Middle East, the United States has been forced to support all these totalitarian regimes who rule their country with iron fists without any regard for freedom and democracy. Many of the sources of global terrorism spring from the archaic social conditions within Saudi Arabia and the vast stores of oil money that the ruling royal family controls. The suppression of growing demand for political freedom and political change has fueled the rise of a destructive terrorism. The Saudis are not tolerant of freedom and democracy and the United States is tolerant of its oil suppliers (Wahby).

#### Terrorists will attack oil structures – oil independence is the only way to solve

**Momayezi, ’11** –research in the area of international relations, Middle Eastern politics, minority politics and democratization; Professor of Political science; Department of Social Sciences @ Clayton State University & dean of the school (Nasser, “Oil, the Middle East, and U.S. National Security”, International Journal of Humanities and Social Science Vol. 1 No. 10, August 2011, [http://www.ijhssnet.com/journals/Vol\_1\_No\_10\_August\_2011/1.pdf)//AY](http://www.ijhssnet.com/journals/Vol_1_No_10_August_2011/1.pdf%29//AY)

There is another important risk to oil supply that is worth mentioning. Some states, or terrorist groups, might attack or threaten to attack specific energy-related targets. The September 11 terrorist attacks offer a reminder of that potential, and several press reports in 2002 suggested that terrorist networks had planned attacks on shipping in the MENA region and sensitive oil infrastructure. In May 2004, gunmen believed linked to alQaeda attacked the Saudi port of Yanbu' al Bahr, an important petroleum shipping terminal, and murdered five Western engineers working there. In February 2006, other militants thought to be affiliated with al-Qaeda attacked the Abqaiq processing facility in Saudi Arabia, where 6.8 MBD of oil are processed (Deutch and Schlesinger, p. 23; Klare, pp. 142-43). The MENA region will continue to occupy a dominant position in world energy trade. Presently, of the 700 billion barrels available in global oil reserves, more than half is found in MENA. This fraction is actually expected to increase with new exploration, and the overall contribution of MENA supply to world trade will grow with increases in production capacity. However, the new discoveries will not likely ease pressure on energy markets, as the Asian (China, Japan and India) energy demand is rising and is expected to continue to rise, which will comprise much of the total increase in world oil demand, from some 86 MBD to more than 118 MBD in 2030 (―Peak Oil Primer‖). According to the International Energy Agency‘s (IES) projection, Chinese oil consumption alone will more than double, from 7.7 MBD in 2008 to 16.3 MBD by 2030 (Lyon, Lefton, and Weiss).Although the U.S. imports of most of its oil from other regions than MENA, this oil is still obtained at world market price. What happens in MENA influences the supply and the price of oil elsewhere.

### Exts – Leverage

**U.S. oil dependence functions as a leverage for Middle East countries not the other way around – Iran strikes, terrorism, & nuclear war**

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The U.S. is caught in a paradoxical dilemma over its dependence of foreign oil: In 2008, the U.S. imported nearly $354 billion dollars on imported foreign oil. DOD consumes one percent of the total oil consumed by the U.S. to fuel the wars on terror in 51 Iraq and Afghanistan. Much of that oil comes from the Middle East, more specifically, Saudi Arabia. The paradox of the situation is that a portion of the money that the U.S.spends on oil from Saudi Arabia is actually supporting Al Qaeda’s war efforts against the U.S

Here’s how it works:

Saudi Arabia for example is a rentier state, with its citizens paid an endowment from proceeds of oil revenues. As such, they do not pay income tax. Instead, in accordance with Islam, they donate 2.5 percent of their income to charity. This offering is known as the Zakat. The Zakat is intended to be donated to charities to benefit the less fortunate in Islamic society and the majority of donations are well intended. However, in the Muslim community there are money laundering rackets designed to channel proceeds of the Zakat to fund Al Qaeda and other radical Islamic groups. One of the practices that facilitate money laundering in Arab society is the practice known as the Hawala, a method of verbal monetary transactions with no written record keeping system. This system makes it extremely difficult to track transactions and know exactly where monies were transferred (Institute for the Analysis of Global Security).

Petrodollars are also used to fund Madrassas, Islamic religious schools. During the Afghan-Soviet War from 1979-1989, Saudi Arabia financed Madrassas around the world, especially in Afghanistan. Many Taliban and Northern Alliance were educated in

Saudi financed Madrassas under the strict Wahhabism form of Islam rooted in Saudi Arabia. During this period, the teachings in the Madrassas were not scholarly based but geared toward religious fervor and hatred of the Soviet infidels. Now the hatred taught in many of these schools is directed at the U.S. (Frontline).

Iran, OPEC’s second largest producer of oil is suspected of funding radical Shiite Muslim organizations and Hezbollah of Lebanon. Some experts contend that Iran’s petrodollars make it untouchable on the geo-political scene, allowing it to defy United Nations sanctions and continue its nuclear program. Despite U.S. trade sanctions, in 2008 Iran exported two and a half million barrels of oil per day. Japan and China were the top importers of Iranian crude. Iran is reliant on petrodollars; 50 percent of its Gross Domestic Product is comprised of oil revenue. However, Iran knows the power of oil and has used it to gain leverage in the geo-political realm. Iran understands that their oil can be used as an economic weapon against the U.S. and the West. If Iran were to remove their two and a half million barrels of oil per day from the global market, the consequences would be severe.

#### Oil dependence creates Middle East leverage on the U.S. – encourages anti-U.S. efforts

**Grant, ’11** – Lieutenant Colonel; master of strategic studies; Executive Officer for the Human Resources Policy Directorate, G1, Headquarters Department of the Army. A graduate of the United States Military Academy at West Point (David, “Breaking the Inertia: Moving Beyond America’s Addiction to Foreign Oil”, Strategy Research Project, 5/4/11, <http://www.dtic.mil.proxy.lib.umich.edu/cgi-bin/GetTRDoc?AD=ADA559875>)//AY

Similar to the nation, the Department of Defense developed equipment, doctrine, and unfortunately a culture based upon oil as its predominant energy source. Although America‘s current addiction to foreign oil developed based upon abundant and affordable oil supplies, the global energy market changed dramatically over time.

Current Global Market Risk

This changing market increased risk as defined by economic volatility, supply vulnerability, and overall security to the United States. The nation recognized this changing market but failed to appropriately adjust domestic and foreign policies to mitigate the risk associated to these changes. Instead of defining a national strategic ―end‖ or goal that reduces foreign imports, intensifying demand by the United States precipitated one of the most significant changes in the global oil market. As the oil rich nations recognized the growing U.S. dependency on foreign oil imports, they initiated the development of state owned companies, the nationalization of oil producing infrastructure, and economic measures to seize wealth and power. Richard B. Andres highlights this extensive shift and surmises that almost ninety percent of petroleum reserves currently fall under national control or the exports flow through nationally owned companies.

These actions empower a select group of nations to exert various national interests onto the global oil market in the form of ―Petro-Politics.‖

Promoting national interests through this increased control of oil resources produces significant impacts on oil dependent nations. In their article regarding ―PetroPolitics‖, Flynnt Leverett and Pierre Noel describe, ―The increasing control that stateowned companies exercise over the world‘s reserves of crude oil and natural gas is…enabling some energy exporters to act with escalating boldness against U.S.

interests and policies.‖

Common examples of challenges to U.S. economic interests and foreign policies are numerous. Saudi Arabia, Mexico, Iraq, Venezuela and others within the top fifteen suppliers of oil to the United States often challenge U.S. national interests, either directly or indirectly, through their economic and foreign policies.

In turn, this significant shift in the application of resource-based power produces dramatic effects on the diplomatic and economic policies of the United States. Summarized by Thomas Kraemer‘s discussion of this issue, ―America is hamstrung because any 5forceful action on our part … could result in the disruption of oil supplies that the world economy completely depends upon.‖

Additionally, the global nature of these issues creates increased pressures on the United States‘ ability to maintain positive foreign relations with other oil dependent nations which further complicates the development of solutions to the nation‘s addiction. Due to the intertwined nature of economic volatility and supply vulnerability the risk associated with these factors is difficult to separate. However, the United States‘insatiable appetite for oil exacerbates both of these factors and when combined with thephysical security challenges promote increased frictions within the global oil market. Richard G Lugar quantifies the United States demand for oil, ―With less than 5 percent of the world‘s population, the United States consumes 25 percent of the world‘s supply of oil.‖ In terms of sheer volume, this equated to approximately 12.9 million barrels per day in 2008 of crude oil and refined petroleum products.

This quantity roughly equates to the amount of oil imported per day by Japan, China, and Germany combined. As other developing nations increase their demands within the global market, competition increases amongst all consumers. The challenge for U.S. policy makers is maintaining critical but tenuous relationships with oil suppliers as described by Verrastro et al,―…actions of these countries, relationships among countries, and relationships among

countries and companies all become more important.‖

To support its addiction, the United States continues to accept risk in the form of economic volatility from an imperfect global oil market at enormous cost. A July 2010 CNA study quantified the monetary cost of imported oil to the nation as $386 billion dollars in 2008 and over $350 billion dollars in 2009. These expenditures were in spite 6of financial stressors associated with an economic recession.

Economic volatility also creates a budgetary challenge for the Department of Defense as it strives to effectively execute its mission of defending the nation. The cost of energy for the Department of Defense is approximately $20 billion dollars per year.

However, volatility within exporting nations can further strain the Department of Defense budget. According to one study, ―a $10 change in the per barrel cost of oil translates to a $1.3 billion change to the Pentagon‘s energy costs.‖

Further exacerbating this market are pressures by nations or actors that do not support common U.S. goals and interests.

This volatility, real or perceived, creates unpredictable reactions that affect the energy interests of the United States.

Meanwhile, the magnitude of physical security risk associated with energy increases as the United States becomes progressively more dependent upon imported

oil. Today, the United States imports approximately 60 percent of its oil requirement. Of these imports, roughly 28 percent comes from member countries of the Organization of Petroleum Exporting Countries (OPEC) and 13 percent of the imports from OPEC are from Persian Gulf countries.

The vulnerable nature of oil infrastructure often becomesan opportune target for various actors attempting to advance their interests onto the global stage. Successful attacks provide credibility to these groups by creating political, military, and economic consequences to those who depend upon a steady supply of oil. One example is the effect of decreased Iraqi oil production as a result of war, insurgent attacks, theft, and oil smuggling. In 2007, production capacities were 700,000 barrels

less than their pre-2003 levels. Another example is the attempted, but unsuccessful, terrorist attack on a Saudi Arabian facility in 2006 that provides the majority of the 7 country‘s production.

In reviewing these specific instances and evaluating the outcome of potential future attacks, CNA concluded that ―…a series of well coordinated attacks on oil production and distribution facilities could have serious negative consequences on the global economy.‖

Clearly this dependency upon an unstable region of the world represents a continuous risk to the security and prosperity of the United States. The cost of the nation‘s addiction also drives foreign policy decisions. In 1980, President Jimmy Carter, during his State of the Union address, articulated what has become known as the Carter Doctrine He stated,―An attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force.‖

### Democracy Impact

#### Oil dependence destroys the spread of democracy

**Momayezi, ’11** –research in the area of international relations, Middle Eastern politics, minority politics and democratization; Professor of Political science; Department of Social Sciences @ Clayton State University & dean of the school (Nasser, “Oil, the Middle East, and U.S. National Security”, International Journal of Humanities and Social Science Vol. 1 No. 10, August 2011, [http://www.ijhssnet.com/journals/Vol\_1\_No\_10\_August\_2011/1.pdf)//AY](http://www.ijhssnet.com/journals/Vol_1_No_10_August_2011/1.pdf%29//AY)

America is hamstrung because any forceful action on its part against nations like Iran, Saudi Arabia, Kuwait, and Bahrain could result in the disruption of oil supplies on which the U.S. and global economy necessarily depend. The addiction to oil only serves to contaminate our true values when acting in MENA. Besides contaminating our intent to bring freedom and democracy to the region, American oil money actually is bolstering governments which are diametrically opposed to American values. In places like Saudi Arabia, Iran, Kuwait, and Bahrain, oil revenues are used to insulate the regimes from any pressure to open up their economies, liberate their women, or allow freedom (Hertog). Huge oil windfalls have created societies led by the wealthy dictators and monarchs who have no incentive for reform. The problem with the totalitarian governments of the oil states is that the people have been suppressed to the point that they do not have any other alternative than resorting to revolution to bring reform and change, as it is happening today throughout the MENA region. In the Arab-Muslim world, the ruling elite has been able to sustain themselves in power without ever empowering their people—without ever allowing progressive parties to emerge—because they have massive oil revenues to keep their people quiet and themselves in power

## Answers to

### AT: TDP Cp

#### TDP is impossible- the process can’t imitate natural process

Palmer 05

[Paul, PhD in Physical Chemistry from Yale, “Comments on 'Changing World Technologies' Plan to Turn Garbage into Oil” 4-9-05, http://www.mindfully.org/Technology/2005/Changing-World-Technologies-Palmer9apr05.htm, javi]

I will back up to the beginning and pick apart the very heading of the article that began this all in Discover. It began with the heading "Anything into Oil" and proceeded in the article to flesh this out so: "The process is designed to handle almost any waste product imaginable, including turkey offal, tires, plastic bottles, harbor-dredged muck, old computers, municipal garbage, cornstalks, paper-pulp effluent, infectious medical waste, oil-refinery residues, even biological weapons such as anthrax spores. " Now in your article, you, or the claimants, hoping no doubt to have a prayer of passing the giggle test, have backed off a bit by only saying this much: "The company says its process works on tires, various hazardous wastes, and plastic as well as heavy metals. " Most emphatically none of this can pass the giggle test but let me ask you, do you understand what is being said here? You are saying that this company has a process which can turn steel into oil (just to select one of the more obvious idiocies). Do you know that steel is almost a pure element, namely iron, which no chemical process can convert to carbon? Are you familiar with the alchemist's search for transmutation in which they tried to turn base metals into gold? At least they didn't turn base metals into carbon and hydrogen, which is pretty much what oil is. This conversion just happens to contravene the laws of physics as presently understood. Is that a good enough indictment of the frauds being perpetrated by these PR mavens? Now let's look a little further, to the subheading "Technological savvy could turn 600 million tons of turkey guts and other waste into 4 billion barrels of light Texas crude each year ". Apply a bit of that skepticism that journalism once relied on. How many pounds is 600 million tons. Multiply 600,000,000 by 2000 to get 1200 billion pounds. Now lets look at the oil. Depending on your definition of barrel, one of them weighs 300 to 400 pounds. So multiply 4 billion by 300 and you get 1200 billion pounds. What a strange coincidence! These phoneys say they can turn every pound of mixed water, dirt, rocks, paper, steel, acetone, tars, polyethylene, concrete (and oh, yes, turkey scraps too) into one pound of - are you ready for this - not just oil, not just a grease derivative, but light Texas crude. The loaves and fishes story has now been left in the dust. Jesus must be biting his nails with regret that he didn't think of this. Consider now the thrust of the article as it seeks to motivate such legerdemain. How is this magical trick to be done? Why, with thermal depolymerization! Surely any word with seven syllables has got to be capable of practically anything. Not only are we going to hit all of this mixed mass with seven syllables, we are going to mimic in minutes, the very process that the poor, ineffective earth takes millions of years to carry out, namely the conversion of turkey guts into petroleum. Did I hear right? These people have become experts on the origins of petroleum, a topic which is energetically debated by real scientists? Not only that, the process which forms petroleum in the earth is now revealed to be none other than thermal depolymerization. I don't know the chemical reactions that produce petroleum, but given the complex molecules and polymers in petroleum, I would have thought they would include the very opposite concept, synthesis and polymerization, not depolymerization. However, how sexy would it be to claim that you are producing an oil by a process having nothing in common with natural processes?

#### Energy produced from TDP isn’t cost effective- most waste will still be present after deploymerization

Palmer 05

[Paul, PhD in Physical Chemistry from Yale, “Comments on 'Changing World Technologies' Plan to Turn Garbage into Oil” 4-9-05, http://www.mindfully.org/Technology/2005/Changing-World-Technologies-Palmer9apr05.htm, javi]

I could go on forever in this vein, but let me deal with the heart of the claims, in every publication I have read on this subject, including yours. It is the drumbeat of wonder that pervades the writing, the notion that this is something unique and previously unknown. Do you know what is being described here? A mountain of turkey guts, consisting of protein, water, grease, saccharides, bones and more is being subjected to steam. Out of all this, the grease is melted, steamed out, and collected. All the rest of it is left over. Some protein may be actually depolymerized leaving amino acids or just protein fragments. Most everything else is probably unchanged. As a pure guess, I would guess that 90% of the mass passes thru without significant change. Feathers, bones, dirt, are not going to be affected and if they are, or were, their breakdown products don't even resemble oil (excuse me, Texas light crude). Let me speak to the attitude of marvel you surround this trivial operation with. This is something I learned to do from my mother and my guess is you did too. How many times have I put a turkey or chicken carcass into a pot of boiling water, cooled it down and skimmed off the grease? Is this a revolutionary technological breakthrough in your book? But this is different you say. This is depolymerization. Can you explain to me what the polymers are that we are talking about here? Since you are not chemists yourselves, did it ever occur to you to actually ask a technically competent scientist what chemical process was being described? Obviously not, or you would never have written your silly article. I have no idea whether all of that investment, and million dollar grant and plant building portion of the article is based on any reality whatsoever. I personally don't believe a word of it, but I base that only on my core belief that the companies and investors mentioned could not possibly be so gullible as to be able to be fooled by transparently impossible claims. But maybe I am wrong. The person who is charged with knowing, with actually investigating these claims is the author. I doubt that she did any of that. Let me finish with one qualification. I have no doubt that this absurdly wasteful society is capable of producing mountains of animal trimmings with no plan whatsoever for further handling it. I believe that someone could put into place a plan to steam the mixed animal waste and extract the oils from it, for what that could be worth. I doubt that the energy value of the recovered oil would be even close to the energy input required to recover it. But that is why scientists who can do energy calculations are hired to do them. I have read a ton of publicity emanating from this company and I have never seen a shred of a careful calculation of anything. All I read is openmouthed, gee-whiz adulation of any claim these people put out. I have never seen any report by anyone that suggested they had seen any machinery actually depolymerizing anything. Until some unbiased, skeptical investigator, not awed by pie-in-the-sky claims, tests out and calculates theoretical yields and inspects machinery, inputs, and outputs, I will remain a total skeptic.

### AT: Oil Dependence Now

#### Don’t mistake increased domestic oil supplies as energy independence—it’ll only last us a couple of years and would affect our economy

Heim 10 [Jim Heim is chairman of the Moore County Democratic Party, August 23, 2010, “America's Oil Dependence Just Delays the Inevitable” http://www.thepilot.com/news/2010/jun/13/americas-oil-dependence-just-delays-inevitable/, accessed 6/29/12]//DLi

Whatever answers eventually emerge, we have serious choices to make. Experts agree that the easy, cheap oil has been found and extracted. Now oil companies are moving into arctic areas and deep water locations where expensive new technologies must be developed and perfected. Petroleum companies have shown great interest in recovering and profiting from that oil, but next to none in the technologies needed to limit the damage from spills and blowouts. Surprisingly, considering their opposition to federal bailouts, Republicans are arguing to continue limits on the oil companies’ liability for the damage their negligence causes. That would put taxpayers on the hook. Reliance on unproven, ­expensive technologies to supply our energy needs merely delays the inevitable. We are simply running out of oil. A report issued this year by the United States Joint Forces Command said, “By 2012, surplus oil production capacity could entirely disappear, and as early as 2015, the shortfall in output could reach nearly 10 MBD [million barrels per day].” That would be more than 10 percent of consumption. When demand exceeds supply, prices soar and shortages start to affect our economy. Anyone who lived through the gas shortages of the ’70s will not want to go through that again. It’s our responsibility to take alternative energy seriously. Developing wind, solar, biomass, nuclear and other solutions must become our focus — as concentrated in time and effort as for any major crisis we have faced. Such a series of projects will require a partnership between government and private enterprise — and serious federal outlays. The challenge is enormous and too important to leave to the whims of the market. It would be a mistake to regard this new “Manhattan Project” as nothing more than a cost. On the contrary, developing such remarkable new technologies will create new industries and millions of new jobs. If we do it right, most of those companies and jobs will be right here in our state and country. Alternative energy could be the driver of America’s future economy. As for the “drill, baby, drill” crowd, consider this: The U.S. produces only 12 percent of the world’s oil and consumes 24 percent of it. Given our total reserves, we would exhaust our national supply (including ANWR and offshore sources) in under three years if we used only our own oil. Then what? Is this a rational policy? We are learning, painfully, the cost of offshore drilling, the results of stripping our regulatory agencies of their ability to control risk, and the power of huge multinational corporations to shift the risks from their activities to us. Mr. Hayward’s question is a good one, but he’s the wrong one to ask it. We Americans should be asking it. In fact, the ones who truly deserve an answer to the ­question they can’t ask are the millions of fish, birds and other animals currently dying hideous deaths in the Gulf of Mexico. If you’ve seen the ­photos that BP has been trying desperately to keep away from our media, you know the face of tragedy. You should be asking why the oil containment effort in the Gulf has been so disastrously inept. The people deploying the booms have no idea what they’re doing, the supplies they need are not available, and BP is spending much more money defending their bottom line than America’s coastline. You should be outraged that BP has announced $10 billion for dividends this year in the face of the mounting costs they’re incurring.

### AT: Russian Econ

#### Medvedev’s modernization program is diversifying Russian econ – U.S. oil independence won’t kill its economy

**Selivanova, ’11** – (Maria, “Medvedev pitches Russian modernization to investors at Davos”, RIA Novosti, 1/28/11, http://en.rian.ru/analysis/20110128/162345571.html)//AY

A special fund will be set up in Russia to help reduce risks posed by foreign investors, notably by introducing co-investment schemes. Under such schemes, intended for up to 10 years, corporate projects will be co-financed by private investors and the government, the Russian business daily Vedomosti reports. At least 20 billion roubles should be raised for the fund to begin with, says the paper, adding that over time the proportion of private investment should considerably surpass that of treasury allocations.

Russian authorities are not going to introduce any additional taxes on the financial sector in an effort to make Moscow a world financial center.

The abolition on January 1, 2011, of the tax on the sale of shares (or the capital gains tax) is expected to give a jolt to foreign investment in Russia. The Russian economy does need foreign capital. Admittedly, though, along with encouraging heavier direct investment (notably, in industrial production), a favorable taxation system may also draw more speculative capital onto the country's stock exchange.

**Investment plus technological expertise**

According to Dmitry Medvedev, investors should be excited about the idea of creating a common Eurasian market, spanning the continent from the Atlantic coast to the Pacific, and operating under uniform, clear-cut rules. Russia's prospective accession to the World Trade Organization and to the Organization for Economic Cooperation and Development will help translate this idea into reality, he said.

The Russian president promised a favorable climate for innovative, high-tech entrepreneurship and venture capital in the country. He pushed his country's Skolkovo project as the most ambitious international high-tech project. "I'm sure we can expect new global brands to arrive in Russia in the years to come."

Dmitry Medvedev also stressed the importance of attracting technological expertise. Projects to develop energy efficient technologies and to enhance energy security should become the driving force of Russia's high-tech sector, he said, inviting foreign partners to contribute.

One striking example of such partnership is a recent deal between the British oil giant BP and Russia's Rosneft.

"Owing to a high degree of uncertainty and to the constant redistribution of property in the 1990s, Russian petroleum companies now lag some ten years behind in oil recovery technology," explains Valery Mironov, deputy director of the Russian School of Economics' Development Center. "Which is why they have to collaborate with foreign companies in offshore recovery and deepwater drilling."

Expanding broadband Internet across Russia will create greater opportunities for doing business in Russia, Medvedev said. Improved Internet connectivity will also make it easier for the business community to have direct contact with Russian government agencies, thus cutting down on corruption.

Improvements to infrastructure are crucial to modernization and attracting foreign investment, Medvedev said. Russia should make sure its infrastructure is accessible both to the business community and the public at large. Preparations for large-scale international sporting events, such as the Sochi Olympics in 2014 and the FIFA World Cup in 2018, are expected to give an additional boost to infrastructure development in Russia, he said.

**Human resources**

A competent workforce is extremely importance to investors. Russia has already relaxed its migration laws to encourage qualified foreign professionals to come and work in Russia, and is willing to unilaterally validate foreign university diplomas and academic degrees.

On the other hand, the government expressed willingness to sponsor study-abroad programs for Russians aspiring to become civil servants, scientists and engineers.

# Neg - Oil Depenence

## Defense

### Cant Solve

#### Impossible to solve oil dependency by 2035

Alic - Geopolitical Analyst, Co-Founder of ISA Intel, and the Former Editor-in-Chief of ISN Security Watch in Zurich- 12 (Jen, July 1st, 2012, “Weaning off Middle Eastern Means Less Than You Think,” [http://oilprice.com/Energy/Crude-Oil/Weaning-off-Middle-East-Oil-Means-Less-Than-you-Think.html)//HL](http://oilprice.com/Energy/Crude-Oil/Weaning-off-Middle-East-Oil-Means-Less-Than-you-Think.html%29//HL)

One expects the crazy talk to come out during an election season, but reports that the US is close to being weaned off Middle Eastern oil and set to become “independent” purposefully fail to consider the fact that as long as America is dependent on oil it will be dependent on Middle Eastern supplies because crude prices are determined globally. Let’s put America’s foreign oil dependency into perspective. In order to achieve independence from foreign oil imports, the US would have to find a replacement for the approximately 8 million barrels of oil it imports every day. There are plenty of factors that can contribute to reducing these imports, including increased domestic oil and gas production, improved fuel economy standards, and renewable energy. According to the [Wall Street Journal](http://online.wsj.com/article/SB10001424052702304441404577480952719124264.html), the US could become completely independent from Middle Eastern oil by 2035 primarily because of increased oil and gas production in the US and Canada (plus imports from Brazil) thanks to the technological advance found in hydraulic fracking.

#### Oil dependence is inevitable – we have become too reliant

Bryce 8

[Robert, “Gusher of Lies”, New York Times, 3-7-08, http://www.nytimes.com/2008/03/07/books/chapters/first-chapter-gusher-of-lies.html?pagewanted=all, javi]

This book focuses on the need to acknowledge, and deal with, the difference between rhetoric and reality. The reality is that the world — and the energy business in particular — is becoming ever more interdependent. And this interdependence will likely only accelerate in the years to come as new supplies of fossil fuel become more difficult to find and more expensive to produce. While alternative and renewable forms of energy will make minor contributions to America’s overall energy mix, they cannot provide enough new supplies to supplant the new global energy paradigm, one in which every type of fossil fuel — crude oil, natural gas, diesel fuel, gasoline, coal, and uranium — gets traded and shipped in an ever more sophisticated global market. Regardless of the ongoing fears about oil shortages, global warming, conflict in the Persian Gulf, and terrorism, the plain, unavoidable truth is that the U.S., along with nearly every other country on the planet is married to fossil fuels. And that fact will not change in the foreseeable future, meaning the next 30 to 50 years. That means that the U.S. and the other countries of the world will continue to need oil and gas from the Persian Gulf and other regions. Given those facts, the U.S. needs to accept the reality of energy interdependence. The integration and interdependence of the global energy market can be seen by looking at Saudi Arabia, the biggest oil producer on the planet. In 2005, the Saudis imported 83,000 barrels of gasoline and other refined oil products per day. It can also be seen by looking at Iran, which imports 40 percent of its gasoline needs. Iran also imports large quantities of natural gas from Turkmenistan. If the Saudis, with their 260 billion barrels of oil reserves, and the Iranians, with their 132 billion barrels of oil and 970 trillion cubic feet of natural gas reserves, can’t be energy-independent, why should the U.S. even try? An October 2006 report by the Council on Foreign Relations put it succinctly: “The voices that espouse ‘energy independence’ are doing the nation a disservice by focusing on a goal that is unachievable over the foreseeable future and that encourages the adoption of inefficient and counterproductive policies.” America’s future when it comes to energy — as well its future in politics, trade, and the environment — lies in accepting the reality of an increasingly interdependent world. Obtaining the energy that the U.S. will need in future decades requires American politicians, diplomats, and businesspeople to be actively engaged with the energy-producing countries of the world, particularly the Arab and Islamic producers. Obtaining the country’s future energy supplies means that the U.S. must embrace the global market while also acknowledging the practical limits on the ability of wind power and solar power to displace large amounts of the electricity that’s now generated by fossil fuels and nuclear reactors. The rhetoric about the need for energy independence continues largely because the American public is woefully ignorant about the fundamentals of energy and the energy business. It appears that voters respond to the phrase, in part, because it has become a type of code that stands for foreign policy isolationism — the idea being that if only the U.S. didn’t buy oil from the Arab and Islamic countries, then all would be better. The rhetoric of energy independence provides political cover for protectionist trade policies, which have inevitably led to ever larger subsidies for politically connected domestic energy producers, the corn ethanol industry being the most obvious example.

### AT: Spikes impact

#### **Reducing oil dependency doesn’t solve price spikes**

Alic - Geopolitical Analyst, Co-Founder of ISA Intel, and the Former Editor-in-Chief of ISN Security Watch in Zurich- 12 (Jen, July 1st, 2012, “Weaning off Middle Eastern Means Less Than You Think,” http://oilprice.com/Energy/Crude-Oil/Weaning-off-Middle-East-Oil-Means-Less-Than-you-Think.html)//HL

As a side note, renewable energy is mentioned as a potential contributor to energy independence. This opinion nicely complements that of ExxonMobil CEO [Rex Tillerson](http://blogs.dallasobserver.com/unfairpark/2012/06/exxonmobil_ceo_burning_fossil.php), who admits that while oil production is causing climate change, renewable energy is a bunch of malarkey and oil independence boils to down drilling as much oil as possible at home. This is also primarily the Republican platform at present. The US Energy Information Administration anticipates that by 2020, the US will fill half of its crude oil demand through domestic sources. OPEC opines that by 2035, shipments of oil from the Middle East to North America "could almost be nonexistent." Fair enough. We are talking here only of production and access to crude oil supplies—not pricing. The most blatantly misleading remark, however, comes from Carlos Pascual, the US State Department’s key energy official. According to Pascual, "Whereas at one point there were real and serious concerns about the ability to maintain sustainable access of supplies to the United States if there were disruptions in the Middle East, that has changed." We beg to differ. Here’s one point everyone must agree on (and Tillerson will be the first to agree): Crude prices are determined globally and prices are affected by factors that ignore origin. As such, to say that the US is no longer concerned about disruptions to oil supplies from the Middle East is not only premature, it is wrong. Disruptions to supply in the Middle East, for instance, reverberate globally, regardless of whether you are drilling at home or importing. If Saudi Arabia were to undergo a latent Arab Spring scenario, or if, for instance, the Houthi rebellion in [Yemen](http://oilprice.com/Energy/Crude-Oil/Al-Qaeda-Only-Partly-to-Blame-for-Yemen-Oil-Crisis.html)were to effectively spill over into Saudi Arabia’s eastern oil-producing province, which is incidentally dominated by a restive Shi’ite minority with sympathies for the Houthi cause, this would affect supply, which would in turn affect the price of oil globally. The significant increase in oil production in the US and Canada would shield the US from diminished access to supplies, but the end result would be the same: a massive increase in prices for domestically produced oil. This is simple supply and demand. ExxonMobil, for instance, is not going to sell its domestically produced oil at a lower price in order to stave off a crisis at home. It will sell it for whatever price it can get, or it will export it for a better deal. This is not to say that weaning the US off of Middle Eastern imports is not a significant development. Certainly, it is. But it must be put into perspective—a perspective that is global and which reflects what is undoubtedly the most important aspect of the equation: pricing. Ask just about any American. They don’t care where the oil comes from as long as it translates into cheaper prices at the pump and cheaper utility bills. Overall, Americans are being misled about the nature of their dependency. Too much focus on removing the “foreign” element in the foreign oil dependence equation is skewing the larger picture: Independence can only be achieved by tackling dependency on oil itself, not on the origins of oil. Any major revolution of any kind, be it a political revolution or an energy revolution, is generally a process of two steps forward, one step backward. Renewable energy brings us two steps forward; increasing domestic oil drilling brings us one step backward, in terms of environmental aims (fracking has been linked to earthquakes and groundwater contamination). It is important to note that fracking does not bring us two steps backward so that we are progressing nowhere in terms of energy independence. While there are dubious implications for the environment, fracking has allowed the US to become the world’s largest producer of natural gas, and this also helps keep prices down. This balance is a necessary part of any transition process.

### Squo Solves

#### No oil dependence—US expected to be completely independent by 2035

NASDAQ 6/27/12 [Doug Sweeney, “America's dependence on Middle East oil could disappear by 2035”, http://community.nasdaq.com/News/2012-06/americas-dependence-on-middle-east-oil-could-disappear-by-2035.aspx?storyid=151646, accessed 6/29/12] //DLi

Energy independence has been a goal of the United States ever since the Nixon Administration and if recent projections are to be believed, that goal may be on the horizon. The Wall Street Journal reports that the U.S. could completely wean itself off fuel from the Middle East by 2035. In addition, reliance on Middle Eastern oil could be cut in half by as soon as 2020. The primary reason behind this decline is increased production of oil and gas in the Western Hemisphere, which has been made possible by the technological advances, such as hydraulic fracturing, better known as fracking. Fracking involves millions of gallons of water laced with sand and chemicals pumped into shale rock thousands of feet below ground. This mixture literally cracks the the rock, releasing shale gas, which is then captured. This process has allowed the U.S. to become the world's leading producer of natural gas , even though Russia has reserves of the hydrocarbon six times the size of America's. In addition to technological advances, declining demand of oil is expected to lessen America's dependence on Middle Eastern oil. This will reportedly be accomplished through more efficient car engines and increased use of renewable energies, such as solar and wind power, reports the Journal. "Whereas at one point there were real and serious concerns about the ability to maintain sustainable access of supplies to the United States if there were disruptions in the Middle East, that has changed," Carlos Pascual, the leading energy official with the State Department, told the news provider. Specifically, the U.S. Energy Information Administration anticipates that by the end of the decade half of America's need for crude oil will be filled by domestic sources. Further, the Organization of Petroleum Exporting Countries says that by 2035 shipments of oil from the Middle East to North America "could almost be nonexistent." One thing that could get in the way of these predictions is public sentiment turning against the fracking industry. There is already a large amount of opposition to the practice - particularly in the Northeast - due to fears that the natural gas extraction process could contaminate groundwater and cause earthquakes. While it has yet to be proven that this former fear could come to pass, a recent report from the National Research Council did link fracking to two earthquakes. However, these seismic incidents, which occurred in Oklahoma and England, were both very minor.

#### New technology introduces alternative fuels—creates competition at the pump and decreases oil dependence

McFarlane 5/30/12 [Robert McFarlane served as President Reagan’s national security adviser and is co-founder of the U.S. Energy Security Council. “MCFARLANE: Flexible fuel to end foreign oil dependence: Domestic energy solutions could slash trade deficit” The Washington Times, http://www.washingtontimes.com/news/2012/may/30/flexible-fuel-to-end-foreign-oil-dependence/, accessed 6/29/12]//DLi

But there is some very good news: In recent years, we have experienced the increasingly promising emergence of new oil reserves here in North America. Because we will now be able to use supplies found here in the United States, those reserves will reduce our balance-of-payment deficits. Unfortunately, it won’t have much impact on the price you pay at the pump - again, because OPEC sets that price. You can do that when you own nearly 80 percent of world oil reserves but supply just 30 percent of daily global supply. It doesn’t have to be this way. But the only way we will overcome this challenge will be to introduce competition at the pump. Fortunately, there are alternative fuels in a family of alcohol products. One hundred years ago, Henry Ford thought we ought to burn alcohol in his cars. It burns cleaner and has a higher octane (race-car drivers love methanol) and would enable us to stop breathing in carcinogenic benzene, xylene and toluene (additives currently blended into gasoline to increase octane). Methanol, which a recent Massachusetts Institute of Technology study concluded is the most desirable alternative to gasoline, can be made from natural gas - think shale gas - which is being found in great abundance both here and throughout the world. The best news is that methanol producers think they will be able to deliver at the pump the energy equivalent to a gallon of gasoline for about $3 (including processing, distribution, infrastructure and taxes) - all without federal subsidies of any kind. Parallel advances have been made in the chemical industry, where the time isn’t far off when a pound of sugar will replace a barrel of oil and enable the growth of a huge biochemical industry that doesn’t rely on any food feedstock to produce those fibers and plastics mentioned earlier. To reach that day, the industry may need a little help - in the way of investment tax credits or loan guarantees - to complete the necessary research and development. But that support will be short-lived and could be offset by no longer needing to give $40 billion annually in subsidies to the oil industry. It would be the best bargain we’d ever make.

#### Possibility of US energy self-sufficiency is become more and more of a possibility

Clayton 6/21/12 [Blake Clayton is a fellow for energy and national security at the Council on Foreign Relations in New York. Dr. Clayton joined CFR from Louis Capital Markets, where he was a senior commodities analyst and head of oil research. He was a special assistant to Matthew R. Simmons, founder and chairman emeritus of Simmons & Company International, with whom he worked on launching Ocean Energy Group, a venture capital firm and think tank focused on early-stage energy innovation. Dr. Clayton was a lecturer in finance and economics at the Oxford University Programme for Undergraduate Studies and was a researcher at the Oxford Institute for Energy Studies. He received a doctorate from Oxford University, where he studied business economics and strategy. The recipient of the University of Chicago Endowed Fellowship, he holds dual master's degrees from the University of Chicago and Cambridge University. “Is U.S. Energy Independence Possible?” Council on Foreign Relations, http://blogs.cfr.org/levi/2012/06/21/is-u-s-energy-independence-possible/, accessed 6/29/12]//DLi

It depends on how you define it. Take oil, for example. The recent, sustained downturn in U.S. oil imports is already the talk of the town, but to recap: The United States is importing far less foreign oil to satisfy its domestic needs than it was even a few years ago. This trend is very likely to continue in the coming years. Observing this new reality, commentators have been wrangling about whether the United States will ever become energy independent in oil. Some emphatically say yes, others passionately say no. The first camp argues that yes, the United States might achieve energy independence in oil in the coming decades, or at the very least, that that prospect isn’t as far-fetched as it once appeared. They forecast that U.S. oil production might overtake consumption one not-too-distant day, and hence that the country will become energy independent. The other camp disagrees. Even if the United States were to become a net oil exporter, they contend, oil prices in the United States would still be tied to events elsewhere. After all, they note, oil prices are set on a global market. Events in one corner of the world affect oil prices everywhere. To become truly independent—by which they mean, for oil supply and demand abroad to have no bearing on oil prices at home—the country would have to completely cut off oil trade with the rest of the world. Short of that unimaginable scenario, U.S. energy independence will remain a chimera. Set aside whether you think the country will ever produce more oil than it consumes, or whether becoming a net oil exporter is a worthwhile goal. There’s a more basic point that’s getting lost in this debate: the distinction between energy independence, literally speaking (also known as energy autarky), and energy self-sufficiency. Is U.S. energy independence achievable? If you define “energy independence” in oil as a United States where the price of a barrel of oil is totally unaffected by oil supply and demand abroad, then no, it isn’t. The chances of that scenario coming to pass are essentially nil. But if you define “energy independence” as many analysts do—as energy self-sufficiency, or producing more than we consume—then that’s another matter. That’s a scenario that, in my view, is becoming more and more important to consider as a long-term possibility. So, is U.S. energy independence possible? The answer depends mostly on how you define it.

#### Status quo solves oil dependency – rerouting now

**Whitlock ’11** –Head Writer about the Pentagon and national security for The Washington Post- (Craig, “U.S. Turns to Other Routes to Supply Afghan War as Relations with Pakistan Fray,” http://www.washingtonpost.com/world/national-security/us-turns-to-other-routes-to-supply-afghan-war-as-relations-with-pakistan-fray/2011/06/30/AGfflYvH\_story.html)// HL

The U.S. military is rapidly expanding its aerial and Central Asian supply routes to the war in Afghanistan, fearing that Pakistan could cut off the main means of providing American and NATO forces with fuel, food and equipment. Although Pakistan has not explicitly threatened to sever the supply lines, Pentagon officials said they are concerned the routes could be endangered by the deterioration of U.S.-Pakistan relations, partly fed by ill will from the cross-border raid that killed Osama bin Laden. Memories are fresh of Pakistan’s temporary closure of a major crossing into Afghanistan in September, resulting in a logjam of hundreds of supply trucks and fuel tankers, dozens of which were destroyed in attacks by insurgents. While reducing the shipment of cargo through Pakistan would address a strategic weakness that U.S. military officials have long considered an Achilles’ heel, shifting supply lines elsewhere would substantially increase the cost of the war and make the United States more dependent on authoritarian countries in Central Asia. A senior U.S. defense official said the military wants to keep using Pakistan, which offers the most direct and the cheapest routes to Afghanistan. But the Pentagon also wants the ability to bypass the country if necessary. With landlocked Afghanistan lacking seaports, and hostile Iran blocking access from the west, Pentagon logisticians have limited alternatives. “It’s either Central Asia or Pakistan — those are the two choices. We’d like to have both,” the defense official said, speaking on the condition of anonymity to avoid alienating Pakistan. “We’d like to have a balance between them, and not be dependent on either one, but always have the possibility of switching.” U.S. military officials said they have emergency backup plans in case the Pakistan routes became unavailable. “We will be on time, all the time,” said Vice Adm. Mark D. Harnitchek, deputy commander of the U.S. Transportation Command, which oversees the movement of supplies and equipment. In such an event, however, the military would have to deliver the bulk of its cargo by air, a method that might not be sustainable; it costs up to 10 times as much as shipping via Pakistan. “We’d have to be a little bit more mindful of what we put in the pipe,” Harnitchek said. The Defense Department is already boosting the amount of cargo it sends to Afghanistan by air. To save on costs, the military is shipping as many of those supplies as possible to seaports in the Persian Gulf before loading them on planes bound for the war zone.

**US is reaching oil independence—key to economy, competitiveness and national security**

**Miller et al 2-20** – [Rich Miller, Asjylyn Loder and Jim Polson, reporters for Bloomberg news “Americans Gaining Energy Independence With U.S. as Top Producer” http://www.businessweek.com/news/2012-02-20/americans-gaining-energy-independence-with-u-s-as-top-producer.html, accessed 6/29/12]//DLi

Feb. 7 (Bloomberg) -- **The U.S. is the closest it has been in almost 20 years to achieving energy self-sufficiency, a goal the nation has been pursuing since the 1973 Arab oil embargo triggered a recession and led to lines at gasoline stations.** **Domestic oil output is the highest in eight years. The U.S. is producing so much natural gas that**, where the government warned four years ago of a critical need to boost imports, **it now may approve an export terminal**. Methanex Corp., the world’s biggest methanol maker, said it will dismantle a factory in Chile and reassemble it in Louisiana to take advantage of low natural gas prices. And higher mileage standards and federally mandated ethanol use, along with slow economic growth, have curbed demand. The result: **The U.S. has reversed a two-decade-long decline in energy independence, increasing the proportion of demand met from domestic sources over the last six years to an estimated 81 percent through the first 10 months of 2011**, according to data compiled by Bloomberg from the U.S. Department of Energy. That would be the **highest level since 1992.** “For 40 years, only politicians and the occasional author in Popular Mechanics magazine talked about achieving energy independence,” said Adam Sieminski, who has been nominated by President Barack Obama to head the U.S. Energy Information Administration. “Now **it doesn’t seem such an outlandish idea.” The transformation, which could see the country become the world’s top energy producer by 2020, has implications for the economy and national security -- boosting household incomes, jobs and government revenue; cutting the trade deficit; enhancing manufacturers’ competitiveness; and allowing greater flexibility in dealing with unrest in the Middle East.** Output Rising **U.S. energy self-sufficiency has been steadily rising since 2005**, when it hit a low of 70 percent, the data compiled by Bloomberg show. **Domestic crude oil production rose 3.6 percent last year to an average 5.7 million barrels a day, the highest since 2003**, according to the Energy Department. **Natural gas output climbed to 22.4 trillion cubic feet in 2010 from 20.2 trillion in 2007**, when the Federal Energy Regulatory Commission warned of the need for more imports**. Prices have fallen more than 80 percent since 2008.** At the same time, the **efficiency of the average U.S. passenger vehicle has helped limit demand. It increased to 29.6 miles per gallon in 2011 from 19.9 mpg in 1978**, according to the National Highway Traffic Safety Administration. The last time the U.S. achieved energy independence was in 1952. While it still imported some petroleum, the country’s exports, including of coal, more than offset its imports. Environmental Concern The expansion in oil and natural gas production isn’t without a downside. Environmentalists say hydraulic fracturing, or fracking -- in which a mixture of water, sand and chemicals is shot underground to blast apart rock and free fossil fuels -- is tainting drinking water. The drop in natural gas prices is also making the use of alternative energy sources such as solar, wind and nuclear power less attractive, threatening to link the U.S.’s future even more to hydrocarbons to run the world’s largest economy. Still, those concerns probably won’t be enough to outweigh the benefits of greater energy independence. Stepped-up oil output and restrained consumption will lessen demand for imports, cutting the nation’s trade deficit and buttressing the dollar, said Sieminski, who is currently chief energy economist at Deutsche Bank AG in Washington. Cutting Trade Deficit **With the price of a barrel of oil at about $100, a drop of 4 million barrels a day in oil imports** -- which he said could happen by 2020, if not before -- **would shave $145 billion off the deficit**. Through the first 11 months of last year, the trade gap was $513 billion, according to the Commerce Department. Crude for March delivery settled at $96.91 a barrel yesterday on the New York Mercantile Exchange. The impact on national security also could be significant as **the U.S. relies less on oil from the Mideast. Persian Gulf countries accounted for 15 percent of U.S. imports of crude oil and petroleum products in 2010, down from 23 percent in 1999.** “The **past image of the United States as helplessly dependent on imported oil and gas from politically unstable and unfriendly regions of the world no longer holds**,” former Central Intelligence Agency Director John Deutch told an energy conference last month. Arab Oil Embargo That dependence was underscored in October 1973, when Arab oil producers declared an embargo in retaliation for U.S. help for Israel in the Yom Kippur war. The U.S. economy contracted at an annualized 3.5 percent rate in the first quarter of the next year. Stock prices plunged, with the Standard & Poor’s 500 Index dropping more than 40 percent in the year following the embargo. Car owners were forced to line up at gasoline stations to buy fuel. President Richard Nixon announced in December that because of the energy crisis the lights on the national Christmas tree wouldn’t be turned on. Today, signs of what former North Dakota Senator Byron Dorgan says could be a “new normal” in energy are proliferating. The **U.S. likely became a net exporter of refined oil products last year** for the first time since 1949. And **it will probably become a net exporter of natural gas early in the next decade**, said Howard Gruenspecht, the acting administrator of the EIA, the statistical arm of the Energy Department. Cheniere Energy Partners LP may receive a construction and operating permit as early this month from the Federal Energy Regulatory Commission for the first new plant capable of exporting natural gas by ship to be built since 1969 in the U.S. Houston-based Cheniere said it expects the $6 billion plant to export as much as 2.6 billion cubic feet of gas per day. Mitchell the Pioneer The shale-gas technology that’s boosting U.S. natural gas production was spawned in the Barnett Shale around Dallas and Fort Worth by George P. Mitchell, who was chairman and chief executive officer of Mitchell Energy & Development Corp. Helped by a provision inserted in the 1980 windfall oil profits tax bill to encourage drilling for unconventional natural gas, the Houston-based oil man pursued a trial-and-error approach for years before succeeding in the late-1990s. The fracking method he devised cracked the rock deep underground, propping open small seams that allowed natural gas trapped in tiny pores to flow into the well and up to the surface. Recognizing that Mitchell was on to something, Devon Energy Corp. bought his company in 2002 for about $3.3 billion and combined it with its own expertise in directional drilling, a method derived from offshore exploration. Hunting for Oil Traditional vertical drilling bores straight down, like a straw stuck straight in the earth. Directional drilling bends the straw, boring horizontally sometimes a mile or more through the richest layer of rock, allowing more of the trapped fuel to make it into the well. This slice of rock is like the kitchen, where ancient plants and creatures came under so much pressure that they cooked into natural gas and oil. The oil boom a century ago tapped reservoirs of fuel that rose out of those layers and got trapped in large pockets closer to the earth’s surface, or used vertical wells that could get out only a portion of the fuel stored in the rock. The **new technology has Devon and its competitors hunting beneath decades-old oil plays long thought depleted.** About an hour’s drive north from where Devon’s soon-to-be- completed new glass headquarters towers 50 stories above downtown Oklahoma City, the company is exploring for oil in the Mississippian and other formations, where oil majors once made their fortunes. It’s racing companies such as Chesapeake Energy Corp. and SandRidge Energy Inc. to buy leases and drill wells. North Dakota Booming **Crude production in the U.S. is already increasing. Within three years, domestic output could reach 7 million barrels a day, the highest in 20 years**, said Andy Lipow, president of Lipow Oil Associates in Houston, a consulting firm. The **U.S. produced 5.9 million barrels of crude** oil a day in December**, while consuming 18.5 million barrels of petroleum** products, according to the Energy Department. North Dakota -- the center of the so-called tight-oil transformation -- is now the fourth largest oil-producing state, behind Texas, Alaska and California. The **growth in oil and gas output means the U.S. will overtake Russia as the world’s largest energy producer in the next eight years,** said Jamie Webster, senior manager for the markets and country strategy group at PFC Energy, a Washington- based consultant. While U.S. consumers would still be susceptible to surges in global oil prices, “we’d end up sending some of that cash to North Dakota” rather than to Saudi Arabia, said Richard Schmalensee, a professor of economics and management at the Massachusetts Institute of Technology in Cambridge. 1.6 Million Jobs **The shale gas expansion is already benefiting the economy**. In 2010, the industry supported more than 600,000 jobs, according to a report that consultants IHS Global Insight prepared for America’s Natural Gas Alliance, a group that represents companies such as Devon Energy and Chesapeake Energy. More than half were in the companies directly involved and their suppliers, with the balance coming at restaurants, hotels and other firms. **By 2035, the number of jobs supported by the industry will rise to more than 1.6 million**, IHS said. Some 360,000 will be directly employed in the shale gas industry. **The oil boom is also pushing up payrolls. Unemployment in North Dakota was 3.3 percent in December, the lowest of any state. Hiring is so frantic that the McDonald’s Corp. restaurant in Dickinson is offering $300 signing bonuses.** State governments are reaping benefits, too. Ohio is considering a new impact fee on drillers and increasing the tax charged on natural gas and other natural resources extracted, Governor John Kasich has said. In Texas, DeWitt County Judge Daryl Fowler has negotiated an $8,000-per-well fee from drilling companies to pay for roads in the district, southeast of San Antonio. Lot of Traffic “It takes 270 loads of gravel just to build a pad used for drilling a well, which means a lot of truck traffic on a lot of roads that nobody except Grandpa Schultz and some deer hunters may have used in the past,” said Fowler, whose non-judicial post gives him administrative control over the county. The federal government will see tax payments from shale gas rise to $14.5 billion in 2015 from $9.6 billion in 2010, according to IHS. Over the period 2010 to 2035, revenue will total $464.9 billion, it said. **Manufacturing companies, particularly chemical makers, also stand to win as the shale bonanza keeps natural gas cheaper in the U.S.** than in Asia or Europe. Dow Chemical Co., which spent a decade moving production to the Middle East and Asia, is leading the biggest expansion ever in the U.S. The chemical industry is one of the top consumers of natural gas, using it both as a fuel and feedstock to produce the compounds it sells. First Since 2001 Midland, Michigan-based Dow is among companies planning to build crackers, industrial plants typically costing $1.5 billion that process hydrocarbons into ethylene, a plastics ingredient. The new crackers will be the first in the U.S. since 2001, said John Stekla, a director at Chemical Market Associates Inc., a Houston-based consultant. Vancouver-based Methanex said last month it plans to take apart the idled Chilean factory and ship it to Louisiana to capitalize on natural gas prices. The **shift to increased energy independence is also the result of government policies to depress oil demand.** “**Vehicles are getting more efficient, and people who travel won’t be driving more miles**,” said Daniel Yergin, chairman of IHS Cambridge Energy Research Associates. Automakers have agreed to raise the fuel economy of the vehicles they sell in the U.S. to a fleetwide average of 54.5 miles per gallon by 2025 under an agreement last year with the Obama administration. No ‘Silver Bullet’ The 2008-09 recession helped lower oil demand, and consumption has lagged even as the economy has recovered, said Judith Dwarkin, director of energy research for ITG Investment Research in Calgary. Coupled with higher domestic output, “this has translated into an import requirement of some 15.4 barrels per person per year -- about on par with the mid-1990s.” She cautioned against thinking that rising oil and gas production is a “silver bullet” for solving U.S. economic woes. Michael Feroli, chief U.S. economist at JPMorgan Chase & Co. in New York, agreed, saying in a Jan. 20 note to clients that oil and gas output accounts for just 1 percent of gross domestic production and isn’t likely on its own to be able to pull the economy into above-trend growth. Cooling on Wind Some companies are hurting from the shale gas glut. With abundant supplies making it the cheapest option for new power generation, Exelon Corp. scrapped plans to expand capacity at two nuclear plants, while Michigan utility CMS Energy Corp. canceled a $2 billion coal plant after deciding it wasn’t financially viable. NextEra Energy Inc., the largest U.S. wind energy producer, shelved plans for new U.S. wind projects next year. Investors also are cooling on wind investment, partly because of falling power prices. T. Boone Pickens, one of wind power’s biggest boosters, decided to focus on promoting natural gas-fueled trucking fleets after dropping plans for a Texas wind farm in 2010. “Wind on its own without incentives is far from economic unless gas is north of $6.50,” said Travis Miller, a Chicago- based utility analyst at Morningstar Inc. Natural gas for March delivery settled at $2.55 per million British thermal units on New York Mercantile Exchange yesterday. When Obama lauded increased energy production in his State of the Union speech on Jan. 24, he drew criticism from some environmentalists opposed to fracking. Waning Confidence “We’re disappointed in his enthusiasm for shale gas,” said Iris Marie Bloom, director of Protecting Our Waters in Philadelphia. Obama “spoke about gas as if it’s better for the environment, which it’s not.” Deutch, who headed an advisory panel on fracking for the Energy Department, voiced concern that public confidence in the technology will wane if action isn’t taken to address environmental concerns. The potential positive impact of increased North American production are “enormous,” he said. **Higher U.S. output lessens the ability of countries like Iran and Russia to use “energy diplomacy” as a means of strengthening their influence**, Amy Myers Jaffe, director of the Baker Institute Energy Forum at Rice University, and her colleagues wrote in a report last year. **While the U.S. will still have to pay attention to issues such as Israel’s security and Islamic fundamentalism in the Mideast, which could affect oil prices, it won’t have to be as worried about its supplies.** Positive ‘Shock’ Carlos Pascual, special envoy and coordinator for international energy affairs at the State Department, suggested at a Council on Foreign Relations conference in December that the increased production in the U.S. and elsewhere gives Washington more “maneuverability” in using sanctions to deal with Iran and its nuclear aspirations. The **increased U.S. production of oil and natural gas is a “positive supply shock” for the economy and for national security**, said Philip Verleger, a former director of the office of energy policy at the Treasury Department and founder of PKVerleger LLC, a consulting firm in Aspen, Colorado. “We aren’t there yet, but it looks like **we’re blundering into a solution for the energy problem**,” he said.

#### There is less dependence on oil now

Port 5/29

[Rob, “Fracking Is Reducing Our Dependence On Foreign Oil”, Say Anything, 5-29-12, http://sayanythingblog.com/entry/fracking-is-reducing-our-dependence-on-foreign-oil/, javi]

For about as long as I ‘ve been following politics I’ve heard politicians talking about ending our dependence on foreign oil, usually in conjunction with touting some new green energy or biofuel. But for most of my lifetime, US imports of oil have grown steadily until just recently as this chart from Mark Perry shows: So what changed to reverse the trend in US dependence on foreign oil? There are a lot of factors vehicles are getting more fuel efficient, and the national recession dampened demand for oil for some time but as the Washington Post reports, the driving force behind this reduction is hydraulic fracturing: From Canada to Colombia to Brazil, oil and gas production in the Western Hemisphere is booming, with the United States emerging less dependent on supplies from an unstable Middle East. Central to the new energy equation is the United States itself, which has ramped up production and is now churning out 1.7 million more barrels of oil and liquid fuel per day than in 2005. There are new players and drivers in the world, said Ruben Etcheverry, chief executive of Gas and Oil of Neuquen, a state-owned energy firm that is positioning itself to develop oil and gas fields here in Patagonia. There is a new geopolitical shift, and those countries that never provided oil and gas can now do so. For the United States, there is a glimmer of the possibility of self-sufficiency. Oil produced in Persian Gulf countries notably Saudi Arabia, Iran, the United Arab Emirates, Kuwait and Iraq will remain vital to the world’s energy picture. But what was once a seemingly unalterable truth that American oil production would steadily fall while the United States remained heavily reliant on Middle Eastern supplies is being turned on its head. Perhaps the biggest development in the worldwide realignment is how the United States went from importing 60 percent of its liquid fuels in 2005 to 45 percent last year (MP: Net oil imports have since fallen to a 20-year low of 42.4% this year through April, see chart above). The economic downturn in the United States, improvements in automobile efficiency and an increasing reliance on biofuels all played a role. But a major driver has been the use of hydraulic fracturing. By blasting water, chemicals and tiny artificial beads at high pressure into tight rock formations to make them porous, workers have increased oil production in North Dakota from a few thousand barrels a day a decade ago to nearly half a million barrels today. I’m not as wrapped up in the concept of trade deficits as some economic observers are. I think it’s more important that consumers be free to seek the best deals in a free market place than for consumers to get their products from any particular geographic location. But in the case of oil specifically, the more business we can take from oil companies owned by rogue, tyrannical, terror-sponsoring states the better. And it’s not like America’s surge in domestic oil production is the result of subsidies or trade protectionism. Domestic oil producers have simply found better ways of doing things that make them more competitive in the energy markets. What s funny is that the oil industry is making good on all the promises the green energy industry has been making for decades. Not only are domestic oil producers reducing our dependence on foreign oil, but hydraulic fracturing has done more to reduce carbon emissions than wind power and solar power combined.

#### Oil dependency is decreasing in the status quo – US military proves

Naish 10

[Josh, “Lean, green killing machines”, New Statesmen, 5-17-10, http://search.proquest.com.proxy.lib.umich.edu/pqrl/docview/346118178/137A919A173749BC2CB/2?accountid=14667, javi]

In response, the Pentagon is investing in solar technology and funding a major ocean-energy project. US military leaders hope that this surge will achieve energy security at home and abroad. It may also help the civilian sector to catch up with Chinese technology, which is devastating a domestic manufacturing sector that was gearing up to create thousands of jobs for the ailing US economy. In Britain, the promise of new green industries maybe stifled at birth by Chinese dynamism. Across the US, military bases are installing black-and-blue solar panels and other solar technology. Last year, Hill air force base switched on the largest solar panel array in the state of Utah. Green tech is also being harnessed to develop solar-powered battlefield radios, as well as tents with solar panels woven into their fabric to power military equipment. Solar power and wind energy are, however, dependent on the weather and thus intermittent. No modern military wants to wait for a good breeze. So the US forces are being more ambitious. At a naval base on the Indian Ocean atoll of Diego Garcia, scientists are developing a system called Otec (ocean thermal energy conversion) - a way to produce power using warm and cold seawater. Warm water is sucked from the surface and cold water from far beneath. The two streams are used to heat and cool a closed system containing a refrigerant-like ammonia that boils at room temperature. The cold water condenses it into a thick liquid, which is piped to the turbine; warm water then vaporises it into an expanding gas that turns the turbine's blades. Once this process is complete, cold water condenses the ammonia again. During the 1970s energy crisis, the Carter administration funded research into Otec, but Reagan abolished it. Trials have now started again. President Obama understands its military potential. He has also promised to end US "foreign oil dependency", claiming that it can be used as a weapon that allows "unstable, undemocratic governments" overseas to wield "undue influence over America's national security". His case has been bolstered by Somali pirates. In late 2008, the hijack of the Sirius Star, a VLCC (very large crude carrier) holding two million barrels of oil, exposed America's vulnerability. If a 60-warship multinational force can't beat a group of brigands, imagine how easily China or a nuclear-armed Iran could block the west's supplies. The technological challenges of Otec are huge. The projected cost of a plant that generates 100-200 megawatts - enough to power 50,000 homes - is $1.5bn. But the potential benefits are dizzying. The oceans could be harnessed as an immense solar-energy store. If the US navy can make it work, Otec could change the future of clean energy. In April, the US navy declared that it will obtain half of its energy from alternative sources by 2020. It has been conducting flight trials of the Green Hornet, an F-18 fighter aircraft powered by a blend of camelina-derived biofuel and conventional jet fuel. It is the first aircraft to break the sound barrier on biofuel. The navy secretary, Ray Mabus, also announced that the "Great Green Fleet" - a carrier strike group that will use no fossil fuels - would launch by 2016. The US army is auditing the greenhouse-gas emissions of each of its units. "We recognised that we were big emitters as well as big fuel users," said Jerry Hansen, the US army's senior energy executive in December. Once again, this isn't about protecting the environment so much as defending vulnerable supply lines. "The more the military thinks about green technology, the more it sees how it goes hand in hand with improving operational effectiveness," Elizabeth Quintana, head of military information studies at Britain's Royal United Services Institute, told me. "Afghanistan is the principal driver for Nato nations. Resupply convoys can be eight miles long and they in effect say: 'Please hit me with a roadside bomb.' Up to 60 per cent of the convoys carry fuel and water. If you reduce that need for supply, you save lives. Forward-operating bases are increasingly using solar panels and wind turbines for sensors and radars. It saves troops from being predictable targets when they regularly refuel generators." In February, the institute hosted an international conference on military eco-efficiency. Quintana believes that the world's armed forces may prove the most efficient at speeding up green tech development: "The military can turn things around much faster than other government departments. Their get-things-done attitude may put them among the most forward thinking organisations in this area."

#### We are currently reducing our oil dependence

Addison 12

[John, “Ten Ways to Reduce U.S. Dependency on Oil”, Clean Fleet Report, 2/22/12, http://www.cleanfleetreport.com/us-oil-dependency-problem/, javi]

Iran stopped shipping oil to the United Kingdom and to France. Global oil prices shot-up and we pay more at the pump. With the threat of oil shipment disruption in the Strait of Hormuz, prices are likely to stay high. In the USA, over 96 percent of our transportation fuel comes from oil refined into gasoline, diesel, and jet fuel. To protect our security and national leadership, Americans are taking 10 actions that are reducing our need for oil, not increasing the demand. In the United States, we embarrassingly have more vehicles than people with driver’s licenses. We have 246 million vehicles. AAA estimates that it costs $8,000 per year for each car owned, which creates a financial burden on cash-strapped Americans. The picture is changing for the better. 1. Fuel Efficiency. Automakers have made an impressive comeback from the Great Recession by building cars that save thousands over their lives with better design, efficient engines, and hybrid drive systems. New cars are averaging 33.8 mpg, up from 24.3 in 1980. Light trucks average 24.5, up from 18.5. DOT Statistics. Automakers are targeting 54.5 mpg for 2025. 2. electric cars. In 2011, 18,000 Americans bought electric cars. This year, 60,000 to 100,000 will buy EVs. Instead of using foreign oil, these cars use domestic energy from renewables, natural gas and nuclear power plants. A big surprise is that most of these cars use no coal power. Five to 10 million electric cars will be on U.S. roads before oil flows from new U.S. offshore drilling platforms. 3. Eliminate Subsidies. U.S. taxpayers watch hundreds of billions disappear in subsidies and tax breaks for oil companies. Does Exxon need to keep paying zero income tax while average Americans struggle to pay their mortgages? The Green Scissors report has common sense fixes that would save us $380 billion. 4. Urban Density. For the first time, most Americans live in urban areas where they need fewer cars, have better public transit, use car sharing, and walk more (with added health benefits). Households are going from 3 to 2 cars and from 2 to 1. 5. Public Transit. Americans make about 11 billion trips on U.S. transit in 2008, a 50-year record. Watch out, there is a bill in Congress to cut transportation funding. The result would force us to spend more on fuel, widening highways, and make us more dependent on oil than ever. 6. Employer Commute and Flexwork Programs. Major employers are saving employees billions in travel costs. Employers sponsor ride sharing, last mile shuttles from transit, and guaranteed ride homes. Some employers have web sites and lunch-and-learns to help employees in the same zip codes match-up for car-pooling. 57 million Americans work at home, at least part-time, with the help of flexwork programs. Employer programs have helped with reduced car ownership. 7. Cash for Clunkers removed 700,000 vehicles from the U.S. roads. Our need for foreign oil was reduced as gas guzzlers were replaced with cars needing less gasoline. It’s an election year and people want a tax break. How about a bi-partisan bill which gives people a break when they trade-in a car getting 18 mpg or less for one with double that – 36 mpg or better? 8. Smart Apps. Internet savvy people now use Google Maps, car share apps, and smart phone apps to compare car directions and time with public transit directions and time. With a few clicks on a social network a shared ride is arranged, or a shared car reserved. In the old millennium we got everywhere by solo driving in gridlock. In the new millennium we plan and use a mix of car driving, transit, and other modes to save time and money. 9. Smart Growth. Community and regional planners are making cities vibrant, with work, services, and play close at hand. Portland, Oregon, is a role model in creating urban density and great public transportation. California with SB375 is requiring regional plans that integrate development, transportation, and greenhouse gas reduction. Rights. States currently have the right to protect their water, citizens’ health, agricultural land, shores, earthquake and tsunami zones, and wildlife refuges. Congressional Republicans are trying to pass legislation that would require offshore oil drilling from California to Florida and from New York to the Carolinas, whether allowed or prohibited by state law. From Nebraska to Texas, eminent domain would force the XL pipeline over the Ogallala Aquifer that provides water to tens of millions and is critical to our nation’s food supply. We must preserve state’s rights to protect water, health, and a livable future. Making us more dependent on oil will not make us less dependent. We must end the subsidies and mandates that make us 96 percent dependent on oil and allow our individuals, cities, and states to keep moving us forward with better transit, fuel-efficient cars, and a brighter future.

#### Efficiency

Reuters 11

[Tom Doggett, “U.S. Oil Dependency Drops Below 50 Percent, Energy Department Reports”, Huffington Post, 5-25-11, http://www.huffingtonpost.com/2011/05/25/us-oil-dependency-drops-energy-department\_n\_867131.html, javi]

U.S. dependence on imported oil fell below 50 percent in 2010 for the first time in more than a decade, thanks in part to the weak economy and more fuel efficient vehicles, the Energy Department said on Wednesday. The department's Energy Information Administration said it expected the moderating trend in U.S. oil-import dependency to continue through the next decade due to improvements in energy efficiency and even higher fuel economy standards. The new data could undercut efforts by Republican lawmakers to expand offshore oil drilling to reduce oil imports, and support the position of the Obama administration and environmental groups that higher mileage requirements for cars and trucks would help cut dependence on foreign oil. Imports of crude and petroleum products accounted for 49.3 percent of U.S. oil demand last year, down from the recent high of 60.3 percent in 2005. It also marked the first time since 1997 that America's foreign oil addiction fell under the 50 percent threshold. "This decline partly reflects the downturn in the underlying economy after the financial crisis of 2008," the EIA said in its weekly review of the oil market. Increased domestic production of ethanol and other biofuels that are blended with gasoline and consumer purchases of more fuel efficient vehicles also slashed the need for oil imports, according to the EIA. Crude oil production, especially in the deep waters of the Gulf of Mexico, increased by 334,000 barrels per day (bpd) between 2005 and 2010, which also cut into foreign oil purchases. U.S. demand for gasoline, jet fuel, heating oil and other petroleum products that were processed from crude oil dropped by 1.7 million bpd to 19.1 million bpd in 2010 from 20.8 million bpd in 2005. At the same time, U.S. exports of petroleum products more than doubled to a record 2.3 million bpd last year from 1.1 million bpd in 2005. "Nowhere have U.S. product exports increased more than in the Americas, including Mexico, Canada, Central and South America and the Caribbean, thanks to economic and population growth and inadequate refining capacity in those countries," the EIA said. As a result, U.S. net imports of refined petroleum products fell last year to their lowest level since 1973, when the government began collecting such data.

## Offense

### Deforestation Turn

Oil dependence is key to the economy and deforestation

Bryce 10

[Robert, senior fellow at the Manhattan Institute, “Cleaning Up Oil's Reputation”, Wall Street Journal, 4-23-10, online.wsj.com/article/SB10001424052702303491304575187934172406168.html, javi]

Oil, and foreign oil in particular, has been a favorite whipping boy for American politicians since the 1970s. They say that we are "addicted" to oil, that oil fosters terrorism and that we can "win the oil endgame." While those claims are effective at rousing the masses, here's the reality: The world isn't using too much oil. It's not using enough. The world now consumes about 85 million barrels of oil per day. That consumption has resulted in unprecedented levels of mobility and affluence. The correlation between oil use and wealth is so close as to be inarguable. Yes, the U.S. is among the world's biggest per capita consumers of oil, but that petroleum has made the American economy into a powerhouse. Increasing oil consumption among the rural poor would have major benefits: It would help preserve rain forests and endangered species habitat; more importantly, it would help save the lives of hundreds of thousands of impoverished people who die premature deaths every year due to indoor air pollution caused by burning biomass. People living in rural poverty have no choice but to cook their food with locally available fuels. For tens of millions of these people, the only choice is wood, which often results in the destruction of forests needed to sustain endangered species. Consider the case of the mountain gorillas living in Virunga National Park in the Democratic Republic of the Congo who are under siege due to demand for wood from the people living around the park. What's the best way to preserve the forest? Local conservationists agree the fastest way is to provide the locals with butane, propane or other fuels derived from oil so that they quit burning wood and charcoal. If oil didn't exist, we'd have to invent it. No other substance can compare to oil in terms of energy density, flexibility, cost and convenience. None of this is to deny the many problems caused by the global oil business. Oil drilling and oil spills—both onshore and offshore—have had significant environmental effects including wildlife kills, habitat destruction and serious land- and water-contamination problems. And the risks of oil drilling were made apparent again on Thursday when a giant oil platform in the Gulf of Mexico, the Deepwater Horizon, sank after it was hit by a deadly explosion and fire. Eleven rig workers are still missing. The costs associated with oil are many. But when compared with the fuels that might replace oil, particularly plant-based biofuels, petroleum outshines them all. Increased use of clean-burning refined oil products would not only preserve forests, it would also provide immediate health benefits to impoverished people who are sickened, or die prematurely, from indoor air pollution caused by the burning of biomass. World-wide, as many as 1.6 million people per year, the majority of them women, are dying premature deaths due to this type of pollution. Indoor air pollution hits women and girls particularly hard because they spend more time indoors, cooking over open fires, than their male counterparts. If environmentalists in the rich countries are truly concerned about protecting rare forest-dwelling animals and improving the lives of the rural poor, they should be arguing for increased use of oil, not less.

#### Deforestation causes global species extinction and kills hundreds of millions

Sandow 2k

[David, Assistant Secretary Oceans, Environment, and Science, “Protecting and Conserving the World’s Forests”]

First, why do we care? In part, because forests cover 40% of the earth's land surface and are home to more than 70% of land-living plants and animals. An estimated 10-30 million species are found in tropical forests alone. The biodiversity that has sustained life through the millennia is found nowhere more richly than in forests. Forests perform myriad ecological services. They are often called the "lungs of the world," absorbing carbon dioxide and exhaling oxygen. Forests pull water from the clouds and control the flow of water into rivers and streams. Forests protect water quality and stabilize soils. Forests also help prevent disasters. When Hurricane Mitch dropped record rains on Nicaragua and Honduras, many villages that sat beneath barren, logged hillsides suffered terrible mudslides, with enormous loss of life. Villages that sat beneath forested hills were spared the worst devastation. And last month in Venezuela, the pattern was repeated. Amid the terrible devastation of some of the worst rains of the century, forests helped save lives. Forests are a critical economic resource -- providing food, fuel, shelter, and jobs for millions of people around the globe. A world without forest resources is scarcely imaginable. Forests provide the raw materials for lumber, plywood, paper, and other staples of modern life. Around the world, more than 500 million people depend on forests for their livelihood. The United States is the world's #1 importer and #2 exporter of forest products -- with total trade valued from $40-60 billion a year. Forests are also home to millions of indigenous people around the globe. And they are places for recreation, relaxation, and inspiration. So we value forests for all these reasons: their rich biological diversity, their many ecological services, their role in disaster prevention, their many products -- so ubiquitous in our lives -- the habitat they offer, and the way they help our spirits soar. What is the state of the world's forests? Sadly, many are disappearing at record rates. In the past decade, the world has lost an average of 38 million acres of forest per year. This is a land area roughly the size of Georgia. Tropical forests are vanishing at the rate of 250 acres per minute. To put that in context -- a football field is roughly two acres. We are losing two football fields of tropical forest every second. Such statistics are difficult to absorb. Perhaps most telling, we have now lost over half the forests that once blanketed the earth. Some countries have lost more than 90% of their forest cover in the past few decades!

#### Broad statistical models prove – unmanaged economic declines lead to global conflict

Royal 10

[Jedediah, Director of Cooperative Threat Reduction – U.S. Department of Defense, “Economic Integration, Economic Signaling and the Problem of Economic Crises”, Economics of War and Peace: Economic, Legal and Political Perspectives, Ed. Goldsmith and Brauer, p. 213-215]

Less intuitive is how periods of economic decline may increase the likelihood of external conflict. Political science literature has contributed a moderate degree of attention to the impact of economic decline and the security and defence behaviour of interdependent states. Research in this vein has been considered at systemic, dyadic and national levels. Several notable contributions follow. First, on the systemic level, Pollins (2008) advances Modelski and Thompson's (1996) work on leadership cycle theory, finding that rhythms in the global economy are associated with the rise and fall of a pre-eminent power and the often bloody transition from one pre-eminent leader to the next. As such, exogenous shocks such as economic crises could usher in a redistribution of relative power (see also Gilpin. 1981) that leads to uncertainty about power balances, increasing the risk of miscalculation (Feaver, 1995). Alternatively, even a relatively certain redistribution of power could lead to a permissive environment for conflict as a rising power may seek to challenge a declining power (Werner. 1999). Separately, Pollins (1996) also shows that global economic cycles combined with parallel leadership cycles impact the likelihood of conflict among major, medium and small powers, although he suggests that the causes and connections between global economic conditions and security conditions remain unknown. Second, on a dyadic level, Copeland's (1996, 2000) theory of trade expectations suggests that 'future expectation of trade' is a significant variable in understanding economic conditions and security behaviour of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations. However, if the expectations of future trade decline, particularly for difficult to replace items such as energy resources, the likelihood for conflict increases, as states will be inclined to use force to gain access to those resources. Crises could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states.4 Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write: The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favour. Moreover, the presence of a recession tends to amplify the extent to which international and external conflicts self-reinforce each other. (Blomberg & Hess, 2002. p. 89) Economic decline has also been linked with an increase in the likelihood of terrorism (Blomberg, Hess, & Weerapana, 2004), which has the capacity to spill across borders and lead to external tensions. Furthermore, crises generally reduce the popularity of a sitting government. "Diversionary theory" suggests that, when facing unpopularity arising from economic decline, sitting governments have increased incentives to fabricate external military conflicts to create a 'rally around the flag' effect. Wang (1996), DeRouen (1995). and Blomberg, Hess, and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997), Miller (1999), and Kisangani and Pickering (2009) suggest that the tendency towards diversionary tactics are greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak Presidential popularity, are statistically linked to an increase in the use of force. In summary, recent economic scholarship positively correlates economic integration with an increase in the frequency of economic crises, whereas political science scholarship links economic decline with external conflict at systemic, dyadic and national levels.5 This implied connection between integration, crises and armed conflict has not featured prominently in the economic-security debate and deserves more attention.

###  Deforestation – Warming

#### Deforestation increases the amount of carbon in the atmosphere

Kiem 7

[Brandon, Wired Science reporter and freelance journalist, “Blowing the Top Off Mountaintop Mining” Wired, 9-10-07, http://www.wired.com/science/planetearth/news/2007/09/mountaintop\_mining?currentPage=all]

To begin a mountaintop-removal operation, crews clear trees from the site. Then they dynamite to shake the peaks loose, and excavate the coal with a 2,000-ton, 20-story-high machine called a dragline. They bulldoze the debris, dumping it into nearby valleys. The practice is relatively new, dating from the mid-1980s, and it's already responsible for about half of all Appalachian coal mining. It's cheaper than old-fashioned techniques, and safer in the short run because miners don't have to tunnel underground. It also lets mining companies reach more coal than they could by digging shafts. The environmental impacts, however, are far greater. According to the Environmental Protection Agency, MTR destroyed more than 1,200 miles of Appalachia's streams and 7 percent of its forests between 1985 and 2001**.** Approximately 800 square miles of mountains were leveled**.** According to the EPA, waste from MTR will bury another 1,000 miles of streams in the next decade**.** Mulhern says the effects are also felt downstream. "Headwater streams are where life is born, creating the nutrients and energy that flow downstream," she says. "All that is lost when you fill the headwaters and replace them with storm drains." The EPA estimates that at least 2,300 square miles of forest -- an area the size of Delaware -- will be lost by 2010. In the past, cleared mountaintops have been vegetatively reclaimed by grass and shrubs rather than the region's characteristic hardwood forests. "Appalachia is America's own little miniature rain forest," says Bonds. "It's the world's most diverse temperate hardwood forest. The Appalachian forests are the carbon sinks and lungs of the East Coast." According to a rough estimate by West Virginia University bio-geochemist William Peterjohn, the deforestation could add as much as 138 million tons of carbon dioxide into the atmosphere-- and that's not even counting the even-larger CO2 emissions from burning the coal.

#### CO2 causes global warming and the newest research methods account for the objections of the skeptics

Oak Ridge Leadership Computing Facility 12

(4-4-12, http://www.ornl.gov/info/features/get\_feature.cfm?FeatureNumber=f20120404-00]

Climate science has an equivalent to the “what came first—the chicken or the egg?” question: What came first, greenhouse gases or global warming? A multi-institutional team led by researchers at Harvard, Oregon State University, and the University of Wisconsin used a global dataset of paleoclimate records and the Jaguar supercomputer at Oak Ridge National Laboratory (ORNL) to find the answer (spoiler alert: carbon dioxide drives warming). The results, published in the April 5 issue of Nature, analyze 15,000 years of climate history. Scientists hope amassing knowledge of the causes of natural global climate change will aid understanding of human-caused climate change. “We constructed the first-ever record of global temperature spanning the end of the last ice age based on 80 proxy temperature records from around the world,” said Jeremy Shakun, a National Oceanic and Atmospheric Administration (NOAA) Climate and Global Change postdoctoral fellow at Harvard and Columbia Universities and first author of the paper. “It’s no small task to get at global mean temperature. Even for studies of the present day you need lots of locations, quality-controlled data, careful statistics. For the past 21,000 years, it’s even harder. But because the data set is large enough, these proxy data provide a reasonable estimate of global mean temperature.” Proxy records from around the world—derived from ice cores and ocean and lake sediments—provide estimates of local surface temperature throughout history, and carbon-14 dating indicates when those temperatures occurred. For example, water molecules harboring the oxygen-18 isotope rain out faster than those containing oxygen-16 as an air mass cools, so the ratio of these isotopes in glacial ice layers tells scientists how cold it was when the snow fell. Likewise, the amount of magnesium incorporated into the shells of marine plankton depends on the temperature of the water they live in, and these shells get preserved on the seafloor when they die. The authors combined these local temperature records to produce a reconstruction of global mean temperature. Additionally, samples of ancient atmosphere are trapped as air bubbles in glaciers, providing a direct measure of carbon dioxide levels through time that could be compared to the global temperature record. Being the first to reconstruct global mean temperatures throughout this time interval allowed the researchers to show what many suspected but none could yet prove: “This is the first paper to definitively show the role carbon dioxide played in helping to end the last ice age,**”** said Shakun, who co-wrote the paper with Peter Clark of Oregon State University. “We found that global temperature mirrored and generally lagged behind rising carbon dioxide during the last deglaciation, which points to carbon dioxide as the major driver of global warming.” Prior results based on Antarctic ice cores had indicated that local temperatures in Antarctica started warming before carbon dioxide began rising, which implied that carbon dioxide was a feedback to some other leading driver of warming. The delay of global temperature behind carbon dioxide found in this study, however, shows that the ice-core perspective does not apply to the globe as a whole and instead suggests that carbon dioxide was the primary driver of worldwide warming. While the geologic record showed a remarkable correlation between carbon dioxide and global temperature, the researchers also turned to state-of-the-art model simulations to further pin down the direction of causation suggested by the temperature lag. Jaguar recently ran approximately 14 million processor hours to simulate the most recent 21,000 years of Earth’s climate. Feng He of the University of Wisconsin, Madison, a postdoctoral researcher, plugged the main forcings driving global climate over this time interval into an Intergovernmental Panel on Climate Change (IPCC)–class model called the Community Climate System Model version 3, a global climate model that couples interactions between atmosphere, oceans, lands, and sea ice. The climate science community developed the model with support from the National Science Foundation (NSF), Department of Energy (DOE), and National Aeronautics and Space Administration and used many codes developed by university researchers. “Our model results are the first IPCC-class Coupled General Circulation Model (CGCM) simulation of such a long duration (15,000 years),” said He, who conducted the modeling with Zhengyu Liu of the University of Wisconsin–Madison and Bette Otto-Bliesner of the National Center for Atmospheric Research (NCAR). “This is of particular significance to the climate community because it shows, for the first time, that at least one of the CGCMs used to predict future climate is capable of reproducing both the timing and amplitude of climate evolution seen in the past under realistic climate forcing.” The group ran simulations that used 4.7 million processor hours in 2009, 6.6. million in 2010, and 2.5 million in 2011. The Innovative and Novel Computational Impact on Theory and Experiment program, jointly managed by leadership computing facilities at Argonne and Oak Ridge National Laboratories, awarded the allocations. Shaun Marcott and Alan Mix of Oregon State University analyzed data, and Andreas Schmittner, also of Oregon State, interpreted links between ocean currents and carbon dioxide. Edouard Bard of Centre Européen de Recherche et d’Enseignement des Géosciences de l’Environnement provided data and expertise about radiocarbon calibration. NSF supported this research through its Paleoclimate Program for the Paleovar Project and NCAR. The researchers used resources of the Oak Ridge Leadership Computing Facility, located in the National Center for Computational Sciences at ORNL, which is supported by DOE’s Office of Science. The paleoclimate community generated the proxy data sets and provided unpublished results of the DATED Project on retreat history of the Eurasian ice sheets. The NOAA NGDC and PANGAEA databases were also essential to this work.

#### Warming causes extinction – scientists prove

Leung 7

[Chee Chee Leung and Reuters, “Warming linked to mass plant, animal extinctions”, The Age, 10-25-07, L/N, javi]

An international group of 19 scientists, analyzing research around the globe, has concluded that a warming climate will rival habitat destruction in prompting widespread extinctions in this century. By 2050, the scientists say, if current warming trends continue, 15 to 37 percent of the 1,103 species they studied will be doomed. They did not extend their prediction to all species worldwide, but they said that the sample was large enough to show that climate change could be disastrous. In addition to current efforts to create parks and reserves, they added, efforts to decrease global warming will be necessary to reduce rates of extinction. The analysis is built on layers of computer models of climate change and other models of the ways species become extinct, each having varying degrees of uncertainty. Consequently, the authors say, the numbers cannot be taken as precise. They are described in the paper as a "first pass" at quantifying the extinction threat posed by a global warming trend.

#### Left unchecked, warming will cause extinction

Sify 2010

[Sydney newspaper citing Ove Hoegh-Guldberg, professor at University of Queensland and Director of the Global Change Institute, and John Bruno, associate professor of Marine Science at UNC (Sify News, “Could unbridled climate changes lead to human extinction?”, http://www.sify.com/news/could-unbridled-climate-changes-lead-to-human-extinction-news-international-kgtrOhdaahc.html]

The findings of the comprehensive report: 'The impact of climate change on the world's marine ecosystems' emerged from a synthesis of recent research on the world's oceans, carried out by two of the world's leading marine scientists. One of the authors of the report is Ove Hoegh-Guldberg, professor at The University of Queensland and the director of its Global Change Institute (GCI). 'We may see sudden, unexpected changes that have serious ramifications for the overall well-being of humans, including the capacity of the planet to support people. This is further evidence that we are well on the way to the next great extinction event,' says Hoegh-Guldberg. 'The findings have enormous implications for mankind, particularly if the trend continues. The earth's ocean, which produces half of the oxygen we breathe and absorbs 30 per cent of human-generated carbon dioxide, is equivalent to its heart and lungs. This study shows worrying signs of ill-health. It's as if the earth has been smoking two packs of cigarettes a day!,' he added. 'We are entering a period in which the ocean services upon which humanity depends are undergoing massive change and in some cases beginning to fail', he added. The 'fundamental and comprehensive' changes to marine life identified in the report include rapidly warming and acidifying oceans, changes in water circulation and expansion of dead zones within the ocean depths. These are driving major changes in marine ecosystems: less abundant coral reefs, sea grasses and mangroves (important fish nurseries); fewer, smaller fish; a breakdown in food chains; changes in the distribution of marine life; and more frequent diseases and pests among marine organisms. Study co-author John F Bruno, associate professor in marine science at The University of North Carolina, says greenhouse gas emissions are modifying many physical and geochemical aspects of the planet's oceans, in ways 'unprecedented in nearly a million years'. 'This is causing fundamental and comprehensive changes to the way marine ecosystems function,' Bruno warned, according to a GCI release. These findings were published in Science

###  Deforestation – Biodiversity

#### Deforestation would lead to a collapse of biodiversity – forests are rich in biodiversity

UN News Centre 10

[“Deforestation imperils biodiversity, but some trends encouraging ”, UN, 10-4-10, http://www.un.org/apps/news/story.asp?NewsID=36330&Cr=fao&Cr1]

High rates of deforestation and degradation of woodlands continue to threaten the world's forest biodiversity, the United Nations Food and Agriculture Organization (FAO) said today, but pointed out that there is a positive trend towards the conservation of forests in many countries. Globally, around 13 million hectares of forests were converted to other uses – including agriculture – or were lost through natural causes each year between 2000 and 2010, according to the findings of FAO’s Global Forest Resources Assessment 2010. The trend of forest loss has declined from around 16 million ha per year during the 1990s, the report said. The report, the most comprehensive assessment of the state of the worlds forests ever undertaken, was released today at the start of the latest biennial meeting of the FAO’s Committee on Forestry and World Forest Week, in Rome. More than one third of all forests are classified as primary – showing no visible signs of human intervention. Primary forests, in particular tropical moist forests, include some of the world's most species-rich and diverse ecosystems. Primary forests account for 36 per cent (1.4 billion hectares) of the world’s forest area but their area has decreased by more than 40 million hectares – at a rate of 0.4 per cent annually – over the past 10 years. That figure does not necessarily mean that the primary forests have disappeared. In many cases, they were reclassified because selective logging or other human interventions were carried out during the reporting period, FAO said. The agency emphasized that forests where humans have intervened can still hold important biodiversity values, contribute significantly to environmental protection, and sustain livelihoods, provided they are well managed. South America accounted for the largest proportion of the loss in primary forests, followed by Africa and Asia. Other threats to forest biodiversity include unsustainable forest management, climate change, forest fires, insect pests and diseases, natural disasters and invasive species – all of which are causing severe damage in some countries.

#### Loss of biodiversity causes extinction

Fowler 8

[Charles W. Fowler, National Marine Mammal Laboratory, Alaska Fisheries Science Center, National Marine Fisheries, 1-25-08, “Maximizing biodiversity, information and sustainability,” Biodiversity Conservation 17:841–855 853]

This study responds to world-wide concern by scientists, policy makers and the public about the variety of observed global changes, including lost biodiversity and anthropogenic extinction (e.g., Millennium Ecosystem Assessment 2005a, b). Many of these changes are seen as degradation that leads to risk, not only for other species, ecosystems, and the biosphere, but also for humans (including the risk of human extinction; Boulter 2002). Such observations justify taking management action to account for ecosystems, the biosphere and the Earth. Management at the level of the biosphere cannot be ignored (Lubchenco et al. 1991; Mangel et al. 1996; Fowler and Hobbs 2002, 2003; Fowler 2003); the inherent complexity of nature cannot be ignored.

###  Deforestation – Water Scarcity

#### Deforestation leads to water scarcity

Roper and Roberts 99

[John Roper, Forest Conservation Consultant, Ralph W. Roberts, Senior Advisor, Forestry and Conservation Canadian International Development Agency, “Tropical forests have a special role in the conservation”, January 1999, http://www.canadian-forests.com/Deforestation\_Tropical\_Forests\_in\_Decline.pdf, javi]

Tropical forests have a special role in the conservation of biodiversity. They are the home to 70 percent of the world's plants and animals -- more than 13 million distinct species (Anon., 1996). The tropical forests contain 70 per cent of the world's vascular plants, 30 per cent of all bird species, and 90 per cent of invertebrates. Many of the mammals are among the most famous icons of natural history -- the great cats, the primates, and the ungulates of the East African woodlands. In tree species alone, tropical rain forests are extremely diverse, often having more than 200 species per hectare. Boreal forests, on the other hand, are biologically much simpler, with as few as one species per hectare for fire-regenerated stands like lodgepole pine in North America. Forests influence the local and global climates. They moderate the diurnal range of air temperatures and maintain atmospheric humidity levels. Forests absorb atmospheric carbon and replenish the oxygen in the air we breathe. The conservation of forest resources in the watersheds that supply water for irrigation, sanitation, and human consumption is an important component of water supply strategies. When tropical watersheds have balanced land use, their forests absorb excessive rainfall that is gradually released later. Forests regulate stream flows by intercepting rainfall, absorbing the water into the underlying soil, and gradually releasing it into the streams and rivers of its watershed. This minimizes both downstream flooding and drought conditions. Tree cover conserves moisture in the soil by providing shade that reduces the evaporative loss from radiant energy exchange with the atmosphere. Tree roots enhance soil porosity, reduce compaction, and facilitate infiltration. Trees act as windbreaks, reducing the force of desiccating, eroding winds at ground level. Some 500 million people live in or at the edge of the tropical forests. They are some of the least privileged groups in our global society. They depend on the forests for many important products and environmental services. Included in this population of forest-dependent peoples are the world's 150 million native or indigenous peoples who rely on the forests for their way of life. They not only meet their economic needs for food and shelter but also form an integral part of their culture and spiritual traditions.

#### Water Scarcity causes global wars

Reilly 02

[Kristie, “Not a Drop to Drink”, In These Times, 11-11-02, http://www.inthesetimes.com/article/131/not\_a\_drop\_to\_drink/, javi]

The statistics are startling, even a bit panic-inducing. Around the world today, more than 1 billion people have no access to clean drinking water; another 2 billion live in conditions of water scarcity. Water consumption doubles every 20 years, at twice the rate of population growth: Since 1970, available fresh water per capita worldwide has dropped 33 percent. By 2025, the world will hold an additional 2.6 billion people—a 57 percent increase over today’s 6.1 billion. By the same year, the United Nations predicts that as many as two-thirds of the world’s population will be living in conditions of severe water shortage, and another third in conditions of absolute water scarcity. Water—to put it mildly—is not an endless resource. Available fresh water makes up less than one-half of 1 percent of all water on the planet. To meet the needs of the estimated 8.7 billion people inhabiting the globe 23 years from now, water use will double. Yet pollution of water sources is projected to quadruple in the same time period, and 10 percent of the world’s crops are already irrigated from sources that cannot be renewed. How will we feed these new arrivals? How will we feed ourselves? Water Wars, by environmental thinker and activist Vandana Shiva, explores the legal and theoretical issues surrounding the rapid diminishing of this most precious resource. Awarded the Alternative Nobel Peace Prize in 1993, Shiva is one of the most far-reaching and hopeful thinkers on the left today. Blue Gold, by Maude Barlow and Tony Clarke—probably North America’s foremost water experts—is a nearly encyclopedic companion, cataloging challenges to water worldwide. The two books provide a chilling, in-depth examination of a rapidly emerging global crisis. “Quite simply,” Barlow and Clarke write, “unless we dramatically change our ways, between one-half and two-thirds of humanity will be living with severe fresh water shortages within the next quarter-century. … The hard news is this: Humanity is depleting, diverting and polluting the planet’s fresh water resources so quickly and relentlessly that every species on earth—including our own—is in mortal danger.” The crisis is so great, the three authors agree, that the world’s next great wars will be over water. The Middle East, parts of Africa, China, Russia, parts of the United States and several other areas are already struggling to equitably share water resources. Many conflicts over water are not even recognized as such: Shiva blames the Israeli-Palestinian conflict in part on the severe scarcity of water in settlement areas. As available fresh water on the planet decreases, today’s low-level conflicts can only increase in intensity. Demand for water is so great near cities that many, like Los Angeles and Beijing, have begun or are considering huge water transport projects just to maintain current levels of usage. At current rates of growth, cities in the American Southwest—Albuquerque, Phoenix and Tucson—are projected to go dry in 10 to 20 years. Experts give Mexico City another 10 years. Much of the world’s available fresh water is stored in naturally forming aquifers underground, and as a result of demand these aquifers are being heavily mined. Surface water has been depleted and polluted so drastically that many countries of the world have no choice but to rely on them: In the Middle East, the world’s most water-scarce region, countries from Saudi Arabia to Libya rely on aquifers to supply half or all of their water. In Israel, aquifers are so empty that sea water has begun to flow into them, in a process called salination. Once sea water enters an aquifer, the basin becomes salty, and the water is permanently lost to use. Urbanization—the paving over and deforestation of the earth—is causing a permanent loss of water as well. Instead of being absorbed into the earth through water catchments like wetlands and forests, to return to aquifers and the water cycle, water flows across pavement out to the sea, where it is lost: Because the earth can no longer hold ground or surface water, drinking water disappears, too. The earth is being paved so quickly, Barlow says, that it may be just 100 years before we’ve lost all the water we have left. Population growth and its concomitant demands on water aren’t the only problems, however. Our existing water supply is being devastated by human activity, from dams to massive river diversion projects to pollution and deforestation. We are rapidly destroying what little water we had to begin with.

#### Water Scarcity causes regional wars – goes global

RT 3-22

[“Global 'water war' threat by 2030 - US intelligence”, RT, 3-22-12, http://www.rt.com/news/water-conflict-terrorism-rivers-239/, javi]

Nations will cut off rivers to prevent their enemies having access to water downstream, terrorists will blow up dams, and states that cannot provide water for their citizens will collapse. This is the future - as painted by a top US security report. The Office of the Director of National Intelligence (ODNI), the organization that oversees US intelligence agencies such as the CIA and FBI, was commissioned by President Barack Obama to examine the impact of water scarcity worldwide on US security. And while the prospect of “water wars” has been touted for decades, it may start to become reality within a decade. The ODNI predicts that by 2040 water demand will outstrip current supply by 40 per cent. Impoverished volatile states will be worst off Water shortages “will hinder the ability of key countries to produce food and generate energy, posing a risk to global food markets and hobbling economic growth.” North Africa, the Middle East and South Asia will be hit the hardest, the report states. And while the coming shortage is a manageable problem for richer countries, it is a deadly “destabilizing factor” in poorer ones. As a rule, economically disadvantaged countries are already prone to political, social and religious turmoil, and failure to provide water for farmers and city dwellers can be the spark for wider “state failure.” Among those most vulnerable to this scenario are Sudan, Pakistan and Iraq, which are all locked in debilitating civil conflicts, and Somalia, which has effectively ceased to function as a state. ODNI envisages countries restricting water for its own citizens to “pressure populations and suppress separatist elements.” The report predicts many ordinary citizens will have to resort to the kind of purification tablets currently used by soldiers and hikers to obtain clean water. Most dangerously, there are whole clusters of unstable countries fighting for the same waterways. The report lists the Nile, which runs through Uganda, Ethiopia, Sudan and Egypt, the Jordan, which runs through Israel and several Arab countries, and the Indus, which is shared by Pakistan and India. These areas are managed by special commissions, and the report states that “historically, water tensions have led to more water-sharing agreements than violent conflicts.” But once there is not enough water to go around, these fragile pacts may collapse, with “more powerful upstream nations impeding or cutting off downstream flow.” Even without outright fighting, the ODNI says countries will use water as a tool of political leverage, similar to how gas and oil are used today. Infrastructure projects will become increasingly politicized: “States will also use their inherent ability to construct and support major water projects to obtain regional influence or preserve their water interests,” the report claims. Laos’ proposed $3.5 billion Mekong Dam has already been the subject of an international dispute with Cambodia and Vietnam, who say the dam will obliterate their fisheries and agriculture. Water terrorism threat And even international compromise is not likely to be enough to ensure water safety. “Physical infrastructure, including dams, has been used as a convenient and high-publicity target by extremists, terrorists, and rogue states, threatening substantial harm and this will become more likely beyond the next 10 years.” The report states that an attack on a single point in a water supply, such as a canal or desalinization plant is sufficient to deprive hundreds of thousands of clean water. In return, governments will have to implement costly safety measures that are likely to be of limited use, due to the extensive length of rivers that have to be protected. The ODNI says there is a decade to tackle the problems before they spiral out of control. It suggests revising international water treaties and investing in superior water purification technologies that will make the increasingly scarce resource plentiful again.

### Isolationism Turn

#### Oil independence results in isolationism – destroys interdependent oil ties

**Phillips, ’09** – taught foreign policy at the United States Studies Centre at the University of Sydney, and American history and politics at Macquarie University (Dennis, “America’s Energy ‘Independence’”, 6/9/08, [http://www.abc.net.au/unleashed/31686.html)//AY](http://www.abc.net.au/unleashed/31686.html%29//AY)

It is argued that a type of strategic Nirvana awaits. Once achieved, the great goal of energy independence will allow the country to cut its dependence on imported oil, restore stability to its blighted economy, turn its back on authoritarian oil-producing regimes, extricate its troops from the Middle East and live happily ever after.

The only problem is that it isn't going to happen - and the results would be disastrous if it did. The global energy business - worth about $US5 trillion a year - is one of the most integrated and interdependent commercial networks in the world. The US imports crude oil from more than 40 different countries, jet fuel from 26 countries and gasoline from 46. Dozens more countries, including Australia, supply the US with strategic mineral commodities (in Australia's case, uranium, manganese, bauxite, tantalum, titanium, nickel, magnesium, etc.)

For the US to try to achieve 'energy independence' in a globalised, interdependent world would be the short road to ruin, both for it and for countries like Australia supplying the raw materials. In reality, the rhetoric of 'energy independence' in American politics is a euphemism for foreign policy isolationism. Those sweet sounding words appeal to patriotic impulses and serve as a popular cover for protectionist trade policies.

Essentially what Bryce and other realist experts on the energy crisis are telling us is that, if we are to deal effectively with the complex challenges of the energy crisis, we must begin by replacing 'dangerous delusions' and mindless political rhetoric with smart power.

### Peacekeeping Turn

#### Oil dependence key to peacekeeping

**Howard, ’08** – **author of "The Oil Hunters: Exploration and Espionage in the Middle East, 1880-1939”** (Roger, “An Ode to Oil”, Wall Street Journal, 11/29/08, [http://online.wsj.com/article/SB122791647562165587.html)//AY](http://online.wsj.com/article/SB122791647562165587.html%29//AY)

Oil can also act as a peacemaker and source of stability because many conflicts, in almost every part of the world, can threaten a disruption of supply and instantly send crude prices spiraling. Despite the recent price falls, the market is still vulnerable to sudden supply shocks, and a sharp increase would massively affect the wider global economy. This would have potentially disastrous social and political results, just as in the summer many countries, including France, Nepal and Indonesia, were rocked by violent protests at dramatic price increases in gasoline.

Haunted by the specter of higher oil prices at a time of such economic fragility, many governments have a very strong incentive to use diplomacy, not force, to resolve their own disputes, and to help heal other people's. This is true not just of oil consumers but producers, which would also be keen not to watch global demand stifled by such price spikes.

Consider the events of last fall, when the Ankara government was set to retaliate against the Iraq-based Kurdish guerrillas who had killed 17 Turkish soldiers and taken others prisoner in a cross-border raid on Oct. 21, 2007. Even the mere prospect of such an attack sent the price of a barrel surging to a then record high of $85 because the markets knew that the insurgents could respond by damaging a key pipeline which moves 750,000 barrels of oil across Turkish territory every day.

Not surprisingly, the Bush administration pushed very hard to prevent a Turkish invasion of northern Iraq -- State Department spokesman Sean McCormack aptly described the frenzy of diplomatic activity as a "full-court press" -- not just to avoid shattering the vestiges of Iraq's political structure but also to stabilize oil prices. In the end it was American pressure that averted a major incursion, allowing crude prices to quickly ease. And the Turks would also have been aware that any invasion could have prompted retaliatory damage on the oil pipeline, losing them vast transit fees.

In general, oil is such a vital commodity, for consumers, producers and intermediaries alike, that it represents a meeting point for all manner of different interests. Sometimes it offers an opportunity for competitors and rivals to resolve differences, as in March 1995, when Iranian President Akbar Hashemi Rafsanjani tried to break deadlock with Washington by offering a technically very demanding oil contract to Conoco. Today, the symbiotic energy requirements of Europe and Russia allows scope to improve mutual relations, not least if European governments act in unison to impose the rules of the European Union's energy charter on Moscow. Oil also gives consumers a chance to penalize, or tempt, international miscreants, just as U.S. sanctions are forcing the Tehran regime to reassess its cost-benefit analysis of building the bomb.

### Iran/Russia Turn

#### US oil dependence is key to peace with Iran and Russia

Howard 8

[Roger, “An Ode to Oil”, Wall Street Journal, 11-29-12, http://online.wsj.com/article/SB122791647562165587.html, javi]

A man rides a bicycle in front of an Iranian oil refinery in Tehran. Many oil wells in Iran are aging rapidly. Syria illustrates how this leverage can work. Although oil has been the primary source of national income for more than 40 years, production has recently waned dramatically: Output is now nearly half of the peak it reached in the mid-1990s, when a daily output of 600,000 barrels made up 60% of gross domestic product, and can barely sustain rapidly growing domestic demand fueled by a very high rate of population growth. With enough foreign investment Syrian oil could be much more productive and enduring, but Washington has sent foreign companies, as well as American firms, a tough message to steer well clear. It is not surprising, then, that the Damascus regime regards a rapprochement with the U.S. as a political lifeline and in recent months has shown signs of a new willingness to compromise. The same predicament confronted Libya's Col. Moammar Gadhafi, who first offered to surrender weapons of mass destruction during secret negotiations with U.S. officials in May 1999. Facing a deepening economic crisis that he could not resolve without increasing the production of his main export, oil, Col. Gadhafi was prepared to bow to Washington's demands and eventually struck a path-breaking accord in December 2003. Col. Gadhafi had been the "Mad Dog" of the Reagan years, but oil's influence had initiated what President Bush hailed as "the process of rejoining the community of nations." Oil could also help the outside world frustrate the nuclear ambitions of Iran, whose output is likely to steadily decline over the coming years unless it has access to the latest Western technology. Many wells are aging rapidly and the Iranians cannot improve recovery rates, or exploit their new discoveries, unless Washington lifts sanctions, which have been highly successful in deterring international investment. Sometimes the markets will prove at least as effective as any American sanctions in keeping a tight political rein on oil producers. For example, when Russian forces attacked South Ossetia and Georgia on Aug. 8, Russia's stock market -- of which energy stocks comprise 60% -- plunged by nearly 7%, and within a week capital outflow reached a massive $16 billion, suddenly squeezing domestic credit while the ruble collapsed in value. A month later, the country was facing its worst crisis since the default of August 1998. But the future of the oil sector is so dependent on attracting massive foreign investment, and the wider Russian economy so heavily dependent on petrodollars, that the Kremlin simply can't afford to unnecessarily unnerve investors. Today the markets know that Russia needs at least $1 trillion in investment if it is to maintain, let alone increase, its oil production. Just five years ago, output was increasing so fast -- energy giants Yukos and Sibneft were posting annual production gains of 20% -- that even the Saudis were worried about their own global dominance. But in the past year Russian oil production has started to wane. Leonid Fedun, a top official at Lukoil, Russia's No. 2 oil producer, admitted back in April that national output had peaked and was unlikely to return to 2007 levels "in my lifetime" and that "the period of intense oil production [growth] is over." Without foreign money and expertise to extract offshore oil and prolong the lifespan of existing wells, Russian production will fall dramatically. Russia's oil, in other words, acted as peacemaker. This seems paradoxical for it has sometimes been said that the Kremlin's attack on South Ossetia and Georgia was prompted by an ambition to seize control of local pipelines. But although this was an aggravating factor, it was not the primary cause because Russian leaders would have felt threatened -- reasonably or not -- by the presence of NATO in what they regard as their own backyard even if the region was not an energy hub. They were also reportedly eyeing Ukraine, which has no petroleum deposits of its own and poses no threat to the dominance of their giant energy company, Gazprom. Oil can also act as a peacemaker and source of stability because many conflicts, in almost every part of the world, can threaten a disruption of supply and instantly send crude prices spiraling. Despite the recent price falls, the market is still vulnerable to sudden supply shocks, and a sharp increase would massively affect the wider global economy. This would have potentially disastrous social and political results, just as in the summer many countries, including France, Nepal and Indonesia, were rocked by violent protests at dramatic price increases in gasoline.

### War/Terror Turn

#### Oil independence leads to Middle East conflict and terrorism

**Miller, ’10** - Lecturer in Political Science at Oklahoma State University and adjunct Professor of Liberal Studies at University of Oklahoma; Ph.D in Political Science;  teaching undergraduate courses on International Relations and the Causes of War, and a graduate Terrorism course (Gregory D., “The Security Costs of Energy Independence”, The Washington Quarterly, April 2010, http://csis.org/files/publication/twq10aprilmiller.pdf)//AY

Three particular threats will grow with a dramatic reduction in U.S. consumption of foreign oil. First, international conflicts would increase between states that currently export oil and states that are their customers. Second, violence would increase within oil-exporting states themselves including civil wars, genocide, and terrorism, all of which are likely to spill into neighboring states. Third, in attempts to avoid the first two threats, states dependent on oil revenues will increasingly turn to illicit sources of income, such as narcotics trafficking or the arms trade, to replace their diminishing wealth.

Of the three ways in which an aggressive drop in the U.S. consumption of foreign oil would be detrimental to the United States and international security, the first two suggest that the loss of oil revenue will lead some oil-exporting states to experience an increase in interstate or intrastate violence or both. International Conflict

A drop in demand for oil would lead to increased probability of conflict between current oil exporters and their customers, including developed Western states, as well as between oil producers and their neighbors. This risk will be especially pronounced in regions with a high number of oil-exporting states such as the Middle East.

According to the concept of interdependence, the likelihood of states going to war with each other decreases as mutual dependence between them increases, with trade being the most common measure of interdependence. This idea was reflected

in the Clinton administration policy of increasing trade with China in the 1990s. Early European integration in the 1950s was similarly designed to prevent a future European war.

If valid, then the inverse of the theory suggests that as states reduce their demand for foreign oil, levels of interdependence between consumer states and oil exporters will fall, increasing the likelihood of conflict. Although it is unlikely that war would occur simply because of lower trade levels, the logic of interdependence theory is that the wealth gained from trade restrains

policymakers who otherwise might engage in conflict.

If the United States is no longer dependent on foreign oil and if oil-exporting states no longer gain revenue from the United States, there would be fewer constraints on each state’s willingness to use violence, whether it be in the form of conventional military force or state sponsorship of terrorism.

One counterargument is that the United States has been drawn into a number of conflicts as a result of its dependence on Middle East oil, such as the reflagging of the Kuwaiti oil tankers in 1987 and the 1991 Persian Gulf War.

According to this logic, reducing its dependence on foreign oil would help the United States stay out of such conflicts. Although plausible, a useful exercise is to imagine a future where the United States is no longer dependent on Middle Eastern states for oil. Although the United States will still have important economic and political interests in the Middle East, such as Israel, Iraq, and Turkey as a NATO ally, if oil no longer provides states with some leverage over U.S. foreign policy, then the United States can pursue its interests with less concern about retaliation by oil-exporting states or by the Organization of the Petroleum Exporting Countries (OPEC). Conversely, as long as oil-exporting states depend on the United States to purchase oil, they are more inclined to assist the United States in pursuing any of its interests, such as the fight against terrorism. Consequently, if states no longer depend on the United States as a consumer, they may have less interest in cooperating with the United States.

### Exts – Terror Turn

#### Oil dependence is key to preventing terrorism - US oil consumption ensures stability

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Internal Conflict

Although internal violence, including terrorism, is often believed to be born out of economic hardship, the number of terrorists coming from Kuwait is greater than the number from Niger.

This suggests that some level of wealth is necessary for violence to occur; bomb-making requires some education, and ammunition costs money. The most dangerous situations appear to be when individuals have wealth, but then lose what they have or fear they are about to, therefore engaging in violence out of dissatisfaction. For example, Professor Scott Atran shows that suicide terrorists are not poor or lacking in opportunities, but that relative loss of economic or social advantage by educated persons might encourage support for terrorism.

If true, current oil-exporting states are particularly susceptible to internal violence as a result of this relative deprivation. Several of these states already suffer from internal problems because of social divisions, but these issues will grow as national wealth declines, making governments less capable of dealing with unrest either by providing social programs or through intimidation. Even in states where the majority of the population does not directly profit from the sale of oil, many people still benefit from oil wealth, such as better roads, more educational opportunities, and more advanced technology. Even relatively small cuts in revenue will negatively affect those populations. Similarly, just as resource scarcity is a catalyst for interstate conflict, economic problems stemming from a lack of necessary resources also lead to internal violence, as illustrated in Sierra Leone in the early 1990s and Indonesia in 1997.

These same types of conflicts would increase in frequency within states that are somewhat stable now, only because oil provides them with a relatively satisfied population and because it gives governments the means to crack down on those who would engage in violence.

#### Oil independence catalyzes the spread of nuclear weapons

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Trafficking in Narcotics and Arms

Historically, when states have been unable to generate revenue through normal trade channels, they sought other sources of wealth. As oil-exporting states experience economic turmoil, particularly if their governments feel they must generate wealth to maintain control or to avoid some of the issues discussed above, many will probably turn to the sale of illicit goods such as drugs and military hardware.

There are several examples of states engaging in such behavior when economic needs arise. For example, Ukraine’s lack of hard currency since its independence in 1991 has led it to become one of the most active suppliers of legal and illegal small arms.

Although the Taliban in Afghanistan initially claimed to oppose drugs on religious grounds, they turned a blind eye to the cultivation of drugs when revenue coming into the country from any other sources dried up.

For other examples of states turning to illicit trade resulting from the loss of legitimate revenue, one need only examine

the behavior of states following the imposition of trade sanctions. North Korea and Libya each developed networks for arms

sales, including nuclear and missile technology.

North Korea continues to lack outlets for legal trade because of international sanctions and relies on several illicit ways of earning money. According to the Institute for Defense Analyses’ Andrew Coe:

In the 1990s, North Korea engaged in considerable illegitimate trade, including large-scale narcotics trafficking, currency counterfeiting, ballistic missile sales, and industrial and sexual slavery. These new exports grew in parallel with the decline in

legal exports.

Missile technology and conventional weapons make up as much as 40 percent of North Korea’s total exports. The regime earns $1.5 billion from missile sales alone, representing 8.8 percent of its gross domestic product (GDP).

Although this amount pales in comparison to the United States, which led the world in arms sales at $37.8 billion in 2008, the risk is the potential growth in arms sales by countries such as Saudi Arabia and Iran, much of which would go to trouble spots in the Middle East and the rest of the developing world.

The danger here is not simply creating illicit trade networks but the link between such networks and various forms of political violence, both within states and across borders.

For example, several terrorist groups, such as the Irish Republican Army in Northern Ireland and the Euskadi ta Askatasuna in Spain, had links to narcotics as well as arms trafficking and were more active as a result of those connections.

Therefore, rather than wait for illicit trade networks to develop and then spend the kind of money the United States has been spending in combating drugs in countries such as Colombia and Mexico, the West should act now to prevent the growth of such networks in oil-exporting states.

### Exts – Conflict Turn

#### Oil independence leads to security issues and border conflicts in the Middle East and South America

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Five OPEC members appear to be most vulnerable to a dramatic loss in oil revenue: Angola, Iraq, Kuwait, Libya, and Saudi Arabia. All five get more than one-half of their GDP from oil, and all are more dependent on oil wealth now than they were 10 years ago. In other words, these states, all of which already suffer from internal tension and border conflicts, will run the greatest risk of experiencing the security issues outlined earlier. Moreover, Algeria, Ecuador, Iran, Libya, and Saudi Arabia have all seen their dependence on oil more than double in the last 10 years.

Based on these trends, many OPEC states will likely continue to become more dependent on oil revenues unless steps are taken now to eliminate some of the future security concerns. OPEC states outside of the Middle East seem better situated to withstand the loss of oil revenue, although making comparisons with regional neighbors suggests that the same security threats discussed above are possible. For example, Latin America has three major oil-exporting states: OPEC members Ecuador and Venezuela and nonmember Mexico. Venezuela and Mexico are much better off economically than their Latin American neighbors, at least partly because of oil; Venezuela gets nearly one-fourth of its GDP from the sale of petroleum. Although internal conflict already exists there, the security threat will likely grow if Venezuela suffers a significant reduction in its petroleum revenue. In addition, the loss of Venezuela’s oil income will force that government to make a choice. One path involves economic hardship similar to experiences in other Latin American states, such as Bolivia and Paraguay. The second path involves the narcotics trade. As we have seen with Colombia, even if the Venezuelan government chooses to stay out of the drug trade, individuals within the country will likely opt in rather than suffer personal hardship.

### Resource Wars Turn

#### Oil independence leads to resource scarcity in OPEC countries

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At the regional level, conflicts between neighboring states would become more likely. Neighbors already make up the bulk of militarized disputes, which are even more common when states must compete for scarce resources. Japan’s expansion for oil prior to World War II is one example, and several conflicts were at least partly about scarce water: Israel and Jordan (1967), Egypt and Ethiopia (1980), and South Africa and Lesotho (1986). A dramatic decrease in demand would lower the price of oil on the world market, which could lead to severe economic consequences for many oil exporters. Initially, many consumer states will benefit as they will be able to afford more oil. Oil-exporting states, however, will see profits decline; and scarcities will become more pronounced, especially in the Middle East.

Oil has often been a cause of regional conflicts, such as Iraq’s invasion of Kuwait in 1990 or the July 2001 clash between Iran and Azerbaijan over oilbearing zones in the Caspian Sea. So, it is possible that less global demand for oil would decrease the frequency of such situations. As states lose their oil revenue, however, and thus the ability to provide their people the standard of living to which they have grown accustomed, basic necessities could become catalysts for conflict. Resources such as food and water are already scarce in many parts of the world, a problem that would be exacerbated for states that lose substantial oil

revenues.

### Russia Econ Turn

#### Oil independence causes Russia econ instability

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Russia is another potential danger spot because it is the only nuclear state, at least for now, that has significant revenue from the sale of oil, roughly 8—20 percent of its GDP. Losing that income will have less dramatic effects on Russia than on many OPEC states more heavily reliant on oil sales, at least partly because of recent attempts to diversify the Russian economy. Its economy, however, is still too fragile to handle a major drop in demand for oil. Given the existing tension between Russia and states such as Georgia and Ukraine, neither the United States nor Russia’s neighbors can afford the risk of a nuclear Russia suffering economic instability.

**Russian econ instability causes extinction**

**Filger, ‘09** (Sheldon, Columnist and Founder – Global EconomicCrisis.com, “Russian Economy Faces Disasterous Free Fall Contraction”, <http://www.huffingtonpost.com/sheldon-filger/russian-economy-faces-dis_b_201147.html>)

In Russia, historically, economic health and political stability are intertwined to a degree that is rarely encountered in other major industrialized economies. It was the economic stagnation of the former Soviet Union that led to its political downfall. Similarly, Medvedev and Putin, both intimately acquainted with their nation's history, are unquestionably alarmed at the prospect that Russia's economic crisis will endanger the nation's political s**tability**, achieved at great cost after years of chaos following the demise of the Soviet Union. Already, strikes and protests are occurring among rank and file workers facing unemployment or non-payment of their salaries. Recent polling demonstrates that the once supreme popularity ratings of Putin and Medvedev are eroding rapidly. Beyond the political elites are the financial oligarchs, who have been forced to deleverage, even unloading their yachts and executive jets in a desperate attempt to raise cash. Should the Russian economy deteriorate to the point where economic collapse is not out of the question, the impact will go far beyond the obvious accelerant such an outcome would be for the Global Economic Crisis. There is a geopolitical dimension that is even more relevant then the economic context. Despite its economic vulnerabilities and perceived decline from superpower status, Russia remains one of only two nations on earth with a nuclear arsenal of sufficient scope and capability to destroy the world as we know it. For that reason, it is not only President Medvedev and Prime Minister Putin who will be lying awake at nights over the prospect that **a** national economic crisis can transform itself into a virulent and destabilizing social and political upheaval. It just may be possible that U.S. President Barack Obama's national security team has already briefed him about the consequences of a major economic meltdown in Russia for the peace of the world. After all, the most recent national intelligence estimates put out by the U.S. intelligence community have already concluded that the Global Economic Crisis represents the greatest national security threat to the United States, due to its facilitating political instability in the world. During the years Boris Yeltsin ruled Russia, security forces responsible for guarding the nation's nuclear arsenal went without pay for months at a time, leading to fears that desperate personnel would illicitly sell nuclear weapons to terrorist organizations. If the current economic crisis in Russia were to deteriorate much further, how secure would the Russian nuclear arsenal remain**?** It may be that the financial impact of the Global Economic Crisis is its least dangerous consequence

### Dollar/Econ Turn

#### Reducing dependence on oil would hurt the economy – the replacement would cost more on taxpayers

Bryce 11

[Robert, senior fellow at the Manhattan Institute, “This Is No Time to Discourage U.S. Oil and Gas Production”, Wall Street Journal, 2-26-11, http://online.wsj.com/article/SB10001424052748704900004576152431935573812.html, javi]

Of all the times for the U.S. to be discouraging domestic production of oil and natural gas, right now might be the worst. Libya's descent into chaos is fueling a rapid rise in oil prices, and unrest in other oil-producing countries in the Middle East and North Africa has led some analysts to predict unprecedented oil-price spikes may be looming. Nevertheless, President Barack Obama's administration has not only stopped issuing permits for deep water drilling in the Gulf of Mexico, it also wants to stop "subsidizing yesterday's energy" so that the federal government can boost revenues and spend more on developing alternative energy sources. The president's 2012 budget, released earlier this month, calls for eliminating a dozen tax incentives that benefit producers of coal, oil and natural gas. Mr. Obama is most eager to eliminate what he calls "costly tax cuts for oil companies." Big Oil has long been a plump piñata for politicos and environmental groups, but a simple cost-benefit analysis shows that eliminating decades-old tax rules for oil and gas could be a lousy deal for consumers. Two tax deductions for the oil and gas sector are most important: percentage depletion (part of the tax code since 1926) and intangible drilling costs (part of the tax code since 1913.) According to Mr. Obama's budget, those two items will cost taxpayers about $2.4 billion per year over the next decade. A handful of other oil- and gas-related tax policies, including an increase in the amortization period for geological and geophysical expenses, cost taxpayers an additional $2 billion per year. So the sector's total annual tax advantages amount to about $4.4 billion. Percentage depletion allows well owners to deduct a certain amount of the value of their production in a given year. It's significant, but the really important tax rule is the deduction for intangible drilling costs, or IDC. That allows drillers to immediately expense, rather than capitalize over years, many of the costs associated with drilling a well, including labor, supplies and fuel. The energy industry contends that the deduction encourages capital formation—and greater production—in their high-risk business. And many economists have long favored expensing to encourage capital formation throughout the economy. Still, even if we assume that the IDC deduction is in fact a subsidy, are consumers getting a tangible benefit? Consider natural gas. Thanks to the increasing use of horizontal drilling and hydraulic fracturing, U.S. gas production has soared over the past few years. The result: Methane prices are now about half what they were in 2008. A simple cost-benefit analysis shows that eliminating decades-old tax rules for oil and gas could be a lousy deal for consumers. Various studies—including one done in 2009 by Tudor, Pickering, Holt & Co., a Houston-based, energy-focused investment bank—predict that eliminating the deduction for intangible drilling costs could increase natural gas prices by 50 cents per thousand cubic feet. Their reasoning is simple: As the industry sees its costs increased and cash flow reduced, it will drill fewer wells and recover less gas. Given that the U.S. burns about 23 trillion cubic feet of gas per year, simple arithmetic shows that eliminating the deduction could mean an increased cost to consumers of $11.5 billion per year in the form of higher natural gas prices. Changing the tax rules could also slow the surprising resurgence of the U.S. oil industry. After decades of declining production, domestic drillers are increasing their oil output because they are tapping shale deposits with the same new techniques that have helped increase gas production. The result: Domestic oil output could jump by as much as one million barrels per day by 2015, according to the analytics firm Bentek Energy. This is great news for tax-starved local and state governments. And it's directly in line with one of the stated goals of Mr. Obama's 2012 budget: to "enhance our national security by reducing dependence on foreign oil." The president also wants to "break our dependence on oil with biofuels," as he said in his State of the Union address. But using biofuels to displace oil requires massive subsidies. Last year, the Congressional Budget Office (CBO) reported that the cost to taxpayers of using corn ethanol to reduce gas consumption by one gallon is $1.78. This year, the corn ethanol sector will produce about 13.8 billion gallons of ethanol, the energy equivalent of about 9.1 billion gallons of gasoline. Using the CBO's numbers, that means the total cost to taxpayers this year for the ethanol boondoggle will be about $16.2 billion. That's compared to the $4.4 billion in foregone tax revenue for oil and gas tax rules. So annual ethanol subsidies are nearly four times as great as those provided for oil and gas, even though domestic drilling provides about 36 times as much energy to the U.S. economy. Per unit of energy produced, the tax preferences given to corn ethanol are 130 times as great as those given to oil and gas. If the president is truly serious about raising revenue, then he should eliminate all energy-related tax preferences and let all sources compete—fair field, no favor. Short of that, he should at least subject ethanol to the same treatment he's giving to oil and gas.

#### Oil dependence key to US purchasing power

**Mutasem, ’12** – Senior Executive in the power industry; was Managing Director for a fortune 500 independent power company, responsible for a portfolio of 11 power plants totaling 6000 MW, as well as a $1 Billion international power generation company overseeing four separate IPP businesses. (Sam, “Dependence on Oil… Good or Bad?”, Energy Pulse, 3/1/12, <http://www.energypulse.net/centers/article/article_display.cfm?a_id=2512)//AY>

With the world getting smaller and the economies are interdependent, commodity price in the US will follow the global price. So whether we depend on foreign oil to some extent or eliminate it all together the domestic price of oil will be set by the global market and if the price is up companies will certainly not sell it for less just because we are not importing any oil. As it is, the US imports 20% of its needs from Canada and only 8% from the Middle East. The remainder is produced domestically.

On the other hand, if we drive to reduce the global dependence on oil, until we find an alternative, we will negatively impact the US economy and the US consumer.

One fact that most do not realize is that all the oil traded globally is nominated in US dollar. What does that mean? As the demand on oil increase so does the price. As a result the demand on the US dollar will increase and so will the purchasing power of the American Consumer. The Dollar...remains King!

Therefore the drive to reduce dependence on oil may have its benefits, but it will come at a cost that should be mitigated as an integral part of the strategy to reduce dependence on oil. Reducing dependence on oil cannot be approached with a tunnel vision strategy because the lower the dependence on oil the lower the demand on the dollar and the lower the purchasing power of the American consumer. So, what is more...a matter of National Security?

#### Oil consumption key to military, dollar hegemony, and preventative warfare

**Clark, ’05** - received two Project Censored awards, first in 2003 for his ground-breaking research on the Iraq War, oil currency conflict, and U.S. geostrategy and again in 2005 for his research on Iran's upcoming euro-denominated oil bourse. He is an Information Security Analyst, and holds a Master of Business Administration and Master of Science in Information and Telecommunication Systems from Johns Hopkins University (William R., “Petrodollar Warfare: Oil, Iraq And The Future Of The Dollar”, p. 26)//AY

\*Petrodollar = a United States dollar earned by a country through the sale of its oil to another country

During the first five decades after WW II, American dominance was largely based on an understanding that the US would provide certain services to its allies, such as military security or regulating world markets, that would benefit both the larger group and itself. This period was marked with a sufficient degree of American multilateralism within the UN framework and international cooperation between the US and Europe regarding NATO military operations.

However, unlike a dominant power that enjoys some level of acquiescence from other nation states, an imperial power has no obligations to allies, nor does it have the freedom for such policies, as the only raw dictate becomes how to hold on to its declining power, often referred to as "imperial overstretch." This is the worldview that neoconservatives such as Cheney and

Rumsfeld advocate, nothing less than US domination of the international order. This requires the doctrine of "preventative warfare," military control over the world's primary energy supply, along with military enforcement of the dollar - and only the dollar - as the international currency standard for oil transactions. Unlike the previous periods of US domination, forward-leaning military unilateralism is the underlying posture.

An unspoken war between the dollar and the euro for global supremacy is at the heart of this new phase of the American Century, referred to in this text as the petrodollar warfare stage. It will be vastly unlike the earlier period from 1945 to 1999. In this new era, the US freedom to grant economic concessions to the G-7 industrialized nations is rather diminished." (This also applies to Russia, the eighth member of tl1e G-8).

The prewar diplomatic conflicts and ongoing reluctance of the world community to broadly internationalize the post war Iraq situation were the opening acts in this new conflict. The ultimate prize in this game of strategy is the currency that OPEC uses as their international standard for oil transactions. It has traditionally been the dollar, but the euro is now challenging this arrangement. In other words, we are witnessing an unspoken oil-currency war between the US and EU.

The petrodollar warfare stage was ushered in on March 19, 2003, with the unprovoked military invasion of Iraq by the US, UK, and a small contingent of Australian soldiers. This stage will be based on two primary factors: using the US military to secure physical control over the planet's remaining hydro- carbon deposits, and using the US military and its various intelligence agencies to enforce the petrodollar arrangement. Iraq was the first overt conflict in this third stage.

Bluntly stated, the petrodollar warfare stage unfortunately represents the application of violence by the US intelligence agencies or military in an effort to enforce the dollar standard as the monopoly currency for international oil transactions. Iran, Venezuela, Russia, and potentially even Saudi Arabia may move away from the petrodollar arrangement in the near to immediate term, thereby becoming the targets of US antagonism. While the Russian political apparatus is fairly immune to direct US interventions, the plausibility of regime change in various less-powerful oil-producing states in the Middle East, Caspian Sea region, West Africa, and Latin America remains ever present.

#### Oil dependence is key to competitiveness and powering our economy

Griswold –PhD in Economics from the London School of Economics, Former Director of the Herbert A. Stiefel Center for Trade Policy Studies at the Cato Institute- 11 (Daniel, March 30th, 2011, “What’s Wrong With Imported Oil?” http://www.cato-at-liberty.org/what%E2%80%99s-wrong-with-imported-oil/)//HL

In [a speech today at Georgetown University](http://www.nytimes.com/2011/03/31/science/earth/31energy.html?ref=business), President Obama called for a goal of cutting America’s oil imports by one-third within a decade. Like all efforts to wean Americans from big, bad imports, such a policy will mean we will all pay more than we need to for the energy that helps to power our economy. I’ll leave it to my able Cato colleagues to dissect the president’s proposal in terms of energy policy, but in terms of trade policy, this is about as bad as it gets. We Americans benefit tremendously from our relatively free trade in petroleum products. Like all forms of trade, the importation of oil produced abroad allows us to acquire it at a price far lower than we would pay if we had to rely more heavily on domestic oil supplies. The money we save buying oil more cheaply on global markets allows our whole economy to operate more efficiently. Oil is the ultimate upstream input that virtually all U.S. producers use to make their final products, either in the product itself or for shipping. If U.S. manufacturers and other sectors are forced to pay sharply higher prices for petroleum products because of import restrictions, their final goods will cost more and will be less competitive in global markets. If households are forced to pay more for gasoline and heating oil, consumer will have less to spend on domestic goods and services. The president talked in the speech about the goal of not being “dependent” on foreign suppliers, but most of our oil imports come from countries that are either friendly or at least not in any way an adversary. [According to the U.S. Department of Commerce](http://www.census.gov/foreign-trade/Press-Release/2010pr/12/exh3s.txt), one third of our oil imports in 2010 came from our two closest neighbors and NAFTA partners, Canada and Mexico. Another third came from the problematic providers in the Arab Middle East and Venezuela (none from Iran, less than one-third of 1 percent from Libya.) The rest came from places such as Nigeria, Angola, Colombia, Brazil, Russia, Ecuador and Great Britain. Even if, by the force of government, we could reduce our imports by a third, there is no reason to expect that the reduction would be concentrated in the problematic providers. In fact, oil is generally cheaper to extract in the Middle East, so a blanket reduction would probably tilt our imports away from our friends and toward our real and potential adversaries. In one speech, the president has managed to state a policy goal that is bad trade policy, bad security policy, and bad foreign policy.

#### Oil dependence ensures dollar supremacy that is key to heg

**Clark, ’05** - received two Project Censored awards, first in 2003 for his ground-breaking research on the Iraq War, oil currency conflict, and U.S. geostrategy and again in 2005 for his research on Iran's upcoming euro-denominated oil bourse. He is an Information Security Analyst, and holds a Master of Business Administration and Master of Science in Information and Telecommunication Systems from Johns Hopkins University (William R., “Petrodollar Warfare: Oil, Iraq And The Future Of The Dollar”, p. 26)//AY

\*Petrodollar = a United States dollar earned by a country through the sale of its oil to another country

To understand the importance of this unspoken battle for currency supremacy, we should review the events that facilitated the emergence of the US as the dominant global superpower afier 1945. It is obvious that US hegemony has traditionally rested on two formidable pillars. Foremost is its overwhelming military superiority over all other global rivals. In 2003 the US' defense spending was more than three times the total of the twelve-state EU, approximately S417 billion versus $120 billion, with the US spending more than the 20 next-largest nations combined. If this disparity were not enough, Washington plans additional defense spending of $2.1 trillion over the next five years (through 2009).

The US figure does not include the annual expenditures of its vast intelligence network, totaling at least S30 billion. No nation or group of nations comes close in defense or intelligence-related spending. China is most interested in economic development and is at least two decades away from becoming a military power that could potentially challenge the US. Certainly no other nations have any interest in challenging the formidable pillar of US military dominance in the near term.

The second pillar of American dominance in the world is the role played by the US dollar as the international World Reserve Currency. Until the advent of the euro in 1999, there was simply no potential challenge to dollar supremacy in world trade. Maintaining this is a strategic imperative if America seeks global dominance. It should be noted that dollar hegemony is in many respects more important than US military superiority. Indeed, removing the dollar pillar will naturally result in the diminishment of the military pillar.

On September 24, 2000, Saddam Hussein emerged from a meeting of his government and proclaimed that Iraq would soon transition its oil export transactions to the euro currency. Why would Saddam Hussein's currency switch be such a strategic threat to the bankers in London and New York? Why would the US president risk 50 years of carefully crafted global alliances with various European allies and advocate a military attack that could not be justified to the world community?

The answer is simple: the dollar's unique role as a petrodollar has been the foundation of its supremacy since the mid 1970s. The process of petrodollar recycling underpins the US' economic domination that funds its military supremacy. Dollar/petrodollar supremacy allows the US a unique ability to sustain yearly current account deficits, pass huge tax cuts, build a massive military empire of bases worldwide, and still have others accept its currency as medium of exchange for their imported goods and services. The origins of this history are not found in textbooks on international economics, but rather in the minutes of meetings held by various banking and petroleum elites who have quietly sought unhindered power.

#### Oil consumption key to econ – strong dollar hegemony & higher budget deficits

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As previously noted, the crucial shift to an oil-backed currency took place in the early 1970s when President Nixon closed the so-called gold window at the Federal Treasury. This removed the dollar's redemption value from a fixed amount of gold to a fiat currency that floated against other currencies. This was done so the federal government would have no restraints on printing new dollars, thereby able to pursue undisciplined fiscal policies to maintain the US' superpower status. The only limit was how many dollars the rest of the world would be willing to accept on the full faith and credit of the US government. The result was rapid inflation and a falling dollar.

Although rarely debated outside arcane discussions of the global political economy, it is easy to grasp that if oil can be purchased on the international markets only with US dollars, the demand and liquidity value will be solidified, given that oil is the essential natural resource for every industrialized nation.

Oil trades are the basic enablers of a manufacturing infrastructure, the basis of global transportation, and the primary energy source for 40 percent of the industrial economy.

During the 1970s a two-pronged strategy was pursued by the US and UK banking elites to exploit the unique role of oil in an effort to maintain dollar hegemony. One component was the requirement that OPEC agree to price and conduct all of its oil transactions in the dollar only, and the second was to use these surplus petrodollars as the instrument to dramatically reverse the dollar's falling international value via high oil prices. The net effect solidified industrialized and developing nations under the sphere of the dollar. No longer backed by gold, the dollar became backed by black gold.

#### Oil consumption is key to leverage trade relations and sustain economic supremacy

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\*Petrodollar = a United States dollar earned by a country through the sale of its oil to another country

Petrodollar recycling works quite simply because oil is an essential commodity for every nation, and the petrodollar system demands the buildup of huge trade surpluses in order to accumulate dollar surpluses. This is the case for every country but the US, which controls the dollar and prints it at will or fiat. Because the majority of all international trade today is conducted in dollars, other countries must engage in active trade relations with the US to get the means of payment they cannot themselves issue. The entire global trade structure today has formed around this dynamic, from Russia to China, from Brazil to South Korea and Japan. Every nation aims to maximize dollar surpluses from their export trade because almost every nation needs to import oil.

This insures the dollar's liquidity value and helps explain why almost 70 percent of world trade is conducted in dollars, even though US exports are about one third of that total. The dollar is the currency that central banks accumulate as reserves, but whether it is China, Japan, Brazil, or Russia, they simply do DOI stack all these dollars in their vaults. Currencies have one advantage over gold. A central bank can use it to buy the state bonds of the issuer, the United States. Most countries around the world are forced to control trade deficits or face currency collapse." Such is not the case in the United States, whose number one export product is the dollar itself. This unique arrangement is largely due to the dollar’s World Reserve Currency role, which is underpinned by its petrodollar role. Every nation needs to obtain dollars to purchase oil, some more than others. This means their trade targets are countries that use the dollar, with the US consumer as the main target for export products of the nation seeking to build dollar reserves.

To keep this process going, the United States has agreed to be importer/consumer of last resort because its entire monetary supremacy depends on dollar recycling. The central banks of Japan, China, South Korea, and numerous others all buy US Treasury securities with their dollars. That in turn allows the US to have a stable dollar, far lower interest rates, and a $500-

$600 billion annual balance of payments deficit with the rest of the world. The Federal Reserve controls the dollar printing presses, and the world needs in dollars.

#### Oil dependence key to petrodollar recycling that supports dollar hegemony

**Clark, ’05** - received two Project Censored awards, first in 2003 for his ground-breaking research on the Iraq War, oil currency conflict, and U.S. geostrategy and again in 2005 for his research on Iran's upcoming euro-denominated oil bourse. He is an Information Security Analyst, and holds a Master of Business Administration and Master of Science in Information and Telecommunication Systems from Johns Hopkins University (William R., “Petrodollar Warfare: Oil, Iraq And The Future Of The Dollar”, p. 26)//AY

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Another benefit in this process for the US is that when oil is priced in a monopoly currency, the nation that prints that currency greatly minimizes its exposure to "currency risk" for their oil/energy prices. In other words, as long as OPEC prices a barrel of oil in the $22-$28 range, US consumers have very steady oil prices regardless of whether the dollar is highly valued or highly devalued against other major currencies. Until the dollar's devaluation relative to the euro in 2002, OI'EC's pricing band generally reflected the price of international oil trades, and the US enjoyed a stable "oil bill." Under the OPEC pricing band established in 2000, a US petrodollar would be worth between 1.5 and 1.9 gallons of sweet crude, when the price of the barrel of oil was between $22 and S28 respectively (42~gallon production barrel).

No other hard currency in the world guarantees access: to the most valuable "commodity" on earth - oil and gas. (Note: I do not consider oil to be a mere commodity. As writer/commentator/veteran Stan Goff noted: "Oil is not a normal commodity. No other commodity has five US navy battle groups patrolling the sea lanes to secure it."" Furthermore, no other hard currency possesses this unique "storage of wealth" that is realized as the monopoly currency for international oil purchases.

After August 1971 when the dollar lost its "gold backing" and became a floating currency, the following three years were periods of volatile dollar devaluation with escalating inflationary pressures. Subsequently, elite US and UK banking interests, in conjunction with Saudi Arabia, created an oil-backed dollar. By 1975 all of OPEC adopted a petrodollar recycling system

in which the dollar transitioned from being - "as good as gold" - to being "as good as black gold." For better or worse, this also meant that the printing on US Federal Reserve notes could have been changed from "In God We Trust" to the more accurate descriptor "In OPEC We Trust," or most specifically, "In Saudi Arabia We Trust." Despite the lack of discussion in mainstream economic commentary regarding this unique geopolitical arrangement, in essence US dollar hegemony is strongly underpinned by petrodollar recycling

###  Turns Heg

#### Dollar strength is key to US hegemony

**Mephi 06**, financial analyst focusing on international economics for Sociology, B.A. from Wesleyan University

[“The Power of International Money: The Dollar & Empire,” http://le-enfant-terrible.blogspot.com/2006/11/power-of-international-money-dollar.html]

Control of global liquidity by the American state is therefore a crucial aspect in which American hegemony has surpassed its British predecessor.(Arrighi 1994, 71, 278-9; Parboni 1981, 19) The status of top capital market was transferred from London to New York, but control was transferred to Washington by means of the power of the Federal Reserve and US political dominance of major global monetary institutions such as the IMF. The US consolidated its position as the central actor in global economic regulation through political clout, in some cases institutionalizing its power. The IMF voting structure, for example, was weighted based upon contribution size with the US making the largest contributions. The IMF, as an international lender, which could potentially create international money(5) or at least international liquidity, would inevitably weaken American political control were it to be a truly multilateral institution. The US, therefore, used its power to limit access to IMF credit and to make loans conditional.(6) (Birnbaum 1968, 18; Block 1977, 111-2) Borrowers of IMF funds were forced into deflationary programs to rectify their payments imbalances and to generate revenue for repayment. Recipients of Marshall Plan aid were highly discouraged from using IMF loans, furthering the Europeans reliance on the US during post-war reconstruction. The general goal of US actions during this period was to assert US control over the sources of international liquidity and ensure that it was sufficient but limited.(Block 1977, 111-4) In this way fiscal discipline was imposed on much of the world and the US increased its leverage through control of global money creation. The US used this leverage to force through economic changes and political arrangements that secured a liberal economic order after several decades of state driven development.(O'Brien and Clesse 2002, 38) While Strange argues that a Top Currency is determined on almost purely economic grounds, one can see in this history the importance of political action in securing that status. The US took strong action in the post-war period to establish a liberal economic order backed by a strong American presence—politically, economically and monetarily. (Hopkins and Wallerstein 1996, 64) In the post-war era global security and monetary institutions served American hegemony “like the blades in a pair of scissors.” (Arrighi, Silver and Ahmad 1999, 87) These two systems enabled the United States at the height of its hegemony to govern the globalized system of sovereign states to an extent that was entirely beyond the horizons, not just of the Dutch in the seventeenth century, but of Imperial Britain in the nineteenth century as well. (Arrighi, Silver and Ahmad 1999, 94) Had the US failed to establish its control over global liquidity in the post-war period it would have had more significance than simply signaling weakness in American hegemony. It would have denied the US the extraordinary ability to greatly influence the global economic environment. Had the dollar been displaced by an internationally created asset the US would suddenly be subject to the same harsh economic discipline other states were. Had the US then acted as it did during the late 1960s and 1970s, pursuing inflation and devaluation, the dollar’s value would have gone into free fall, unsupported by other central banks. The US would not have had the same unilateral ability to spread global deflation as it did in the early 1980s when it wanted to enforce strict fiscal discipline on the third world and increase reliance upon direct US aid. American political control would have been reduced as states had new sources of lending and New York’s prominence as a financial market was reduced. US action to limit and control the international financial institutions created after World War II did more than simply symbolize the extent of American hegemony. The US ensured for itself the continued privileges and power that accrue to it as a result of its currency status. With threats currently mounting to that status the actions it takes now are of immense importance. The US failing to maintain its monetary power would not only signal hegemonic weakness, it would create it.

###  Turns ME War

#### Collapse of US dollar heg leads to conflicts in the Middle East that spill over into global nuclear war

Mike **Whitney , ‘08**, writer for Global Research, 2-4-2008; “Fragile Dollar Hegemony: Iran's Oil Bourse could Topple the Dollar”, <http://www.globalresearch.ca/index.php?context=va&aid=7998>

The petrodollar system is no different than the gold standard**.** Today's currency is simply underwritten by the one vital source of energy upon which every industrialized society depends---oil. If the dollar is de-linked from oil; it will no longer serve as the de-facto international currency and the US will be forced to reduce its massive trade deficits, rebuild its manufacturing capacity, and become an export nation again**.** The only alternative is to create a network of client regimes who repress the collective aspirations of their people so they can faithfully follow directives from Washington. As to whether the Bush administration would start a war to defend dollar hegemony; that's a question that should be asked of Saddam Hussein.Iraq was invaded just six months after Saddam converted to the euro. The message is clear; the Empire will defend its currency. Similarly, Iran switched from the dollar in 2007 and has insisted that Japan pay its enormous energy bills in yen. The “conversion” has infuriated the Bush administration and made Iran the target of US belligerence ever since. In fact, even though 16 US Intelligence agencies issued a report (NIE) saying that Iran was not developing nuclear weapons; and even though the UN's nuclear watchdog, the IAEA, found that Iran was in compliance with its obligations under the Nuclear Nonproliferation (NPT) Treaty; a preemptive US-led attack on Iran still appears likely. And**,** although the western media now minimizes the prospects of another war in the region; Israel is taking the precautions that suggest that the idea is not so far-fetched**.** “Israel calls for shelter rooms to be set up in a bid to prepare the public for yet another war, this time, one of raining missiles.” (Press TV, Iran) **"**The next war will see a massive use of ballistic weapons against the whole of Israeli territory**,"** claimed retired general Udi Shani. (Global Research http://globalresearch.ca/index.php?context=va&aid=7982) Russia also sees a growing probability of hostilities breaking out in the Gulf and has responded by sending a naval task forceinto the Mediterranean Sea and the North Atlantic.

###  Turns Econ

#### Dollar heg key to the US economy – cheap imports and tax cuts

**Nunan 2004 -** [Coilin, editor for the Foundation For the Economics of Sustainability; degree in mathematics from Oxford, “Petrodollar or Petroeuro: A New Source of Global Conflict”, <http://www.feasta.org/documents/review2/nunan.htm>]

At present,approximately two thirds of world trade is conducted in dollars and two thirds of central banks' currency reserves are held in the American currency which remains the sole currency used by international institutionssuch as the IMF**.** This confers on the US a major economic advantage: the ability to run a trade deficit year after year**.** It can do this because foreign countries need dollars to repay their debts to the IMF, to conduct international trade and to build up their currency reserves.The US provides the world with these dollars by buying goods and services produced by foreign countries, but since it does not have a corresponding need for foreign currency, it sells far fewer goods and services in return**,** i.e. the US always spends more than it earns, whereas the rest of the world always earns more than it spends.This US trade deficit has now reached extraordinary levels**,** with the US importing 50% more goods and services than it exports.So long as the dollar remains the dominant international currency, the US can continue consuming more than it produces and, for example, build up its military strength while simultaneously affording tax cuts.

### Cant Solve

#### U.S. oil independence diminishes oil supply faster and this multiplies the effects of all impacts

**Miller, ’10** - Lecturer in Political Science at Oklahoma State University and adjunct Professor of Liberal Studies at University of Oklahoma; Ph.D in Political Science;  teaching undergraduate courses on International Relations and the Causes of War, and a graduate Terrorism course (Gregory D., “The Security Costs of Energy Independence”, The Washington Quarterly, April 2010, http://csis.org/files/publication/twq10aprilmiller.pdf)//AY

Initially, the loss of the United States as a major consumer would not cripple the economies of oil suppliers because there will be enough demand from countries such as India and China to provide continued revenue. In fact, U.S. reductions in consumption would even benefit many other potential consumers that do not have the money to purchase enough oil at current prices. To balance this drop in price, however, the likely response from oil producers will be to boost production and sell more oil. This will diminish the world’s oil reserves even more rapidly, possibly creating more interstate conflicts over remaining oil supplies, and ultimately run the security risks outlined here. As a result, the long-term consequences of even just the United States cutting its consumption of oil will be striking. These effects will be multiplied if global consumption also declines.

### AT: Leverage

#### Oil dependency increase US leverage in oil producers – Syria and Libya compromises prove

**Howard, ’08** – **author of "The Oil Hunters: Exploration and Espionage in the Middle East, 1880-1939”** (Roger, “An Ode to Oil”, Wall Street Journal, 11/29/08, [http://online.wsj.com/article/SB122791647562165587.html)//AY](http://online.wsj.com/article/SB122791647562165587.html%29//AY)+javi

Instead, the dependency of foreign oil producers on their customers plays straight into America's strategic hands. Washington is conceivably in a position to hold producers to ransom by threatening to accelerate a drive to develop or implement alternative fuels, realizing the warning once uttered by Sheikh Ahmed Zaki Yamani, the former Saudi oil minister who pointed out that "the Stone Age did not end for lack of stone." Back in 1973, as they protested at Washington's stance on the Arab-Israeli dispute, Middle East producers were in a position to impose an oil embargo on the Western world. But a generation later, technological advances, and the strength of public and scientific concern about global warming, have turned the tables.

The United States has powerful political leverage over producers because it holds the key to future oil supply as well as market demand. The age of "easy oil" is over, and as fears grow that oil is becoming harder to get, so too will the dependency of producers on increasingly sophisticated Western technology and expertise.

Such skills will be particularly important in two key areas of oil production. One is finding and extracting offshore deposits, like the massive reserves reckoned to be under the Caspian and Arctic seas, or in Brazil's recently discovered Tupi field. The other is prolonging the lifespan of declining wells through enhanced "tertiary" recovery. Because Western companies have a clear technological edge over their global competitors in these hugely demanding areas, Washington exerts some powerful political leverage over exporters, many of whom openly anticipate the moment when their production peaks before gradually starting to decline.

Syria illustrates how this leverage can work. Although oil has been the primary source of national income for more than 40 years, production has recently waned dramatically: Output is now nearly half of the peak it reached in the mid-1990s, when a daily output of 600,000 barrels made up 60% of gross domestic product, and can barely sustain rapidly growing domestic demand fueled by a very high rate of population growth. With enough foreign investment Syrian oil could be much more productive and enduring, but Washington has sent foreign companies, as well as American firms, a tough message to steer well clear. It is not surprising, then, that the Damascus regime regards a rapprochement with the U.S. as a political lifeline and in recent months has shown signs of a new willingness to compromise.

The same predicament confronted Libya's Col. Moammar Gadhafi, who first offered to surrender weapons ofmass destruction during secret negotiations with U.S. officials in May 1999. Facing a deepening economic crisis that he could not resolve without increasing the production of his main export, oil, Col. Gadhafi was prepared to bow to Washington's demands and eventually struck a path-breaking accord in December 2003. Col. Gadhafi had been the "Mad Dog" of the Reagan years, but oil's influence had initiated what President Bush hailed as "the process of rejoining the community of nations."

### AT: Wars

#### Empirics go neg – loss of primary revenue resorts in illicit trade, nuclear arms, and terrorism

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There are at least three plausible counterarguments to the points made above. The first is to question whether the loss of oil revenue will really cause these risks, because many of the states dependent on oil revenues already suffer from internal conflict and engage in illicit trade. In fact, might the loss of oil revenue in Iran conversely reduce its ability to sponsor terrorism and decrease the amount of arms it is able to purchase? Although plausible, the historical record shows the opposite result: as Libya and North Korea lost legitimate trade as a result of sanctions, both increased their involvement in illicit trade and purchased arms in greater numbers.

Although the sanctions themselves, rather than simply the loss of revenue, possibly led to this behavior, the Ukraine example discussed earlier illustrates that sanctions are not a necessary condition for states to sell arms illegally and that lack of wealth is a much more direct explanation.

### AT: Democracy

#### Loss of revenue doesn’t lead to power loss – but even if democratic states emerged, they wouldn’t be stable

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Another counterargument emphasizes some potential benefits of a loss of revenue, namely a reduction in power by

certain domestic groups that could facilitate the emergence of democracy in these countries. There are two responses to this argument. First, it is not clear that the loss of oil revenue will automatically bring about democracy. The loss of wealth by those in power rarely leads them to give up power, but more often causes a greater crackdown on the population to prevent challenges to the state’s authority. Iraq, Libya, and North Korea illustrate that the loss of wealth does not lead to a loss of control by those in power.

In contrast, diversified economies are more likely to bring about democratic reform, regardless of whether certain groups hold power because of oil or not. Assuming that the logic is correct and these oil-producing states are undemocratic only because of the oil revenue held by a few individuals, there is no reason to believe that the subsequently emerging democratic states would be stable or that they would bring to power individuals and groups friendly to the West. Moreover, newly democratizing states are among the least stable and are more prone to wars.

Therefore, even if this counterargument is valid, the results will not alleviate the security concerns discussed in this article and could make them worse. Although there will be numerous benefits of reducing dependence on oil, including possibly democratization, we need to understand and prepare for the risks as well.

### AT: Others Diversify

#### Oil countries won’t diversify – our impacts still apply

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The third counterargument is that even if the concerns in this paper are valid, oil-producing states will eventually diversify their economies on their own to reduce internal instability and chaos, similar to what Mexico and Qatar have done. Again, there are two responses. First, there is no indication that states such as Angola, Kuwait, Libya, and Saudi Arabia are taking such steps, and measures must be taken soon rather than after the oil revenue begins to dry up. In addition, even those states which recognize the need to expand their economy beyond the oil sector, such as Nigeria and Russia, have had difficulty doing so, even in fairly prosperous times.

In part, this is because of limited foreign direct investment (FDI) in non-oil sectors of their economies. The irony is that although higher gas prices increase U.S. incentives to become less dependent on oil in the long term, it simultaneously makes oil-exporting states more dependent on oil in the short term, thus decreasing incentives for diversification. Part of the task for the West is to convince oil-producing states that it is easier to develop alternative sources of income now while profits are high, rather than wait until it is under duress as revenues decline.

#### Oil dependence key to stability – laundry list of impacts

**Miller, ’10** - Lecturer in Political Science at Oklahoma State University and adjunct Professor of Liberal Studies at University of Oklahoma; Ph.D in Political Science;  teaching undergraduate courses on International Relations and the Causes of War, and a graduate Terrorism course (Gregory D., “The Security Costs of Energy Independence”, The Washington Quarterly, April 2010, http://csis.org/files/publication/twq10aprilmiller.pdf)//AY

Despite numerous calls to decrease U.S. dependence on Middle East oil, doing so could have dramatic negative consequences for regional and international security, and these issues are largely overlooked in the current debate over how to cut U.S. consumption. The United States is often faulted for failing to account for the interests of others, and on this issue, a narrow focus on oil independence runs risks detrimental to long-term U.S. and global interests.

The United States should not maintain its dependence on oil simply to prevent economic instability in Russia, regional conflict in the Middle East, or the growth of the drug trade in Venezuela, but the United States must be cautious regarding how it goes about reducing its consumption. Some states are even more dependent on oil revenues than the West is on oil imports, and the United States must be careful about rushing toward energy independence without first considering the unintended consequences.

The United States only gets about 15 percent of its oil from the Middle East. Nearly 22 percent of all OPEC oil, however, is sold to the United States. The United States is the world’s largest consumer of oil (more than 25 percent), and a reduction in U.S. demand will have a dramatic effect on the price of oil and on the world’s oil-exporting states. The real effects of a drop in U.S. consumption are difficult to predict and may depend on how the United States reduces its demand.

If it does so simply through conservation, then the gradual decline in demand will likely have minimal effects on oil exporters. On the other hand, a drastic drop in demand, such as that associated with the development of a new technology, will have significant economic repercussions for a number of countries, even those that do not sell much oil to the United States.

## CP Ideas

### Oil Independence Act

#### The Oil Independence for a Stronger America Act solves for oil dependence – it would move towards a green type of energy and allow for a new type of transportation

States New Service 6-29

[“SENATORS OFFER MEASURE TO FREE AMERICA FROM OVERSEAS OIL”, State News Service, June 29, 2011, l/n, javi]

The Oil Independence for a Stronger America Act of 2011 will set into law the goal of achieving independence from overseas oil in the next 20 years and provides a specific plan for achieving it. By committing America to developing a robust clean energy economy, the legislation would create new jobs while eliminating the national security vulnerability posed by dependence on oil from overseas. As we celebrate our nations independence, our economic fate is firmly in the hands of others: dictators in oil-rich countries, Wall Street speculators, and oil company executives all of whom influence how much we pay at the pump every day, said Merkley. We can continue to send a billion dollars a day overseas and be at the mercy of gas price spikes, or we can invest that money right here at home creating red, white, and blue American jobs. It is time to declare our independence from overseas oil. I am proud to join Senators Merkley, Bennet and Tom Udall in introducing this much needed legislation that sets an ambitious, but attainable, goal of eliminating all oil imports from outside of North America by 2030, said Sen. Carper. This bill provides a comprehensive strategy to reduce our unhealthy oil consumption by improving energy efficiency and increasing the use of clean, renewable energy sources. The legislation also takes important steps forward to increase vehicle efficiency standards and provide Americans with a practical alternative to using their cars, trucks, and vans for every trip. This will save families money at the pump and reduce traffic congestion as well as harmful air pollution. Enacting this bill would help America take control of its energy future by ending our dangerous dependence on foreign oil, which puts our economic, environmental and national security at risk, Udall said. Global oil supplies are struggling to keep up with demand, so combining a suite of solutions including fuel efficiency, advanced biofuels and natural gas vehicles is both a national security and economic necessity. In all of my town halls across Colorado, one thing everyone can agree on is the need to break our dependence on overseas oil, said Bennet. By committing America to developing a robust clean energy economy, the bill would create jobs while eliminating the national security and economic vulnerability posed by dependence on overseas oil. We have outlined a plan to break our dependence on overseas oil in a way that promotes Colorados energy sources and creates Colorado jobs. The veterans of Operation Free are proud to stand with Senators Merkley, Carper, Udall, and Bennet in the fight for American energy independence, said Michael Breen, Vice President of the Truman National Security Project. In Iraq and Afghanistan, we saw firsthand that Americas addiction to oil costs dollars and lives. In Afghanistan, a single gallon of gasoline costs the American taxpayer $400, but that doesnt even begin to measure the price one in every 24 fuel convoys ends in an American casualty. Meanwhile, our most dangerous enemies continue to be funded by oil money. Its time to stop putting oil dollars into the hands of extremists, and to start investing in a clean energy economy here at home. The Oil Independence for a Stronger America Act is the right choice for our security. To eliminate the nations reliance on foreign imports from non-North American countries in 20 years, the bill includes steps to ramp up deployment of electric vehicles, increase travel options and improve infrastructure, make gasoline engines more efficient, develop alternative transportation fuels and reduce the use of oil to heat buildings. The Oil Independence for a Stronger America Act also would create a National Council on Energy Security to ensure a sustained focus on reducing the use of oil. The Council, housed in the White House, would be charged with making recommendations to the President and Congress to ensure America has a focused strategic plan for energy independence and with aligning the actions of various federal agencies. This year, more than two-thirds of Americas oil imports will come from nations that too often do not share our goals or values. This dependence on overseas oil costs our nation a billion dollars per day that could be used here at home. Instead, the United States could be investing in home-grown American clean energy and reduce pollution in our air and water. The Oil Independence for a Stronger America Act would reduce oil consumption in the U.S. by over 8 million barrels per day in 20 years, enough to end the need for oil imports from beyond North America. The plan, which relies on existing technologies and proven strategies, was recently rated the most effective roadmap of the last 5 years to reducing oil consumption by the American Council for an Energy-Efficient Economy. Reducing oil consumption is the only way to break Americas national security and economic vulnerability to hostile countries and groups, geopolitical instability, and natural disasters posed by overseas oil. Increasing domestic drilling will not solve the problem, since the United States only has 3 percent of oil reserves, yet uses 25 percent of all oil. The Department of Energy has estimated that opening up offshore drilling on both coasts would only lower the price of gasoline by three cents per gallon in twenty years. Moreover, domestic drilling is not without risks, as last years BP oil well catastrophe has shown. The Oil Independence for a Stronger America Act will put into law the plan for American oil independence Senator Merkley laid out in June 2010.

### Privatization

#### Incentivizing private industry to solve foreign oil dependence best, USFG investment too expensive

**Reynolds 11** [Lewis Reynolds, Politics Daily: Breaking the Chains: 6 Solutions for Ending Dependence on Foreign Oil, http://www.politicsdaily.com/2010/09/07/breaking-the-chains-6-solutions-for-ending-dependence-on-foreig/ // Access: July 1st 2012 // BP]

4. Implement government intervention wisely. Based on the capital cost of thermochemical fuel plants and the cost of establishing high-yield energy crops, the investment necessary to build infrastructure capable of supplanting all foreign oil could total $900 billion. The government is not going to fund this all at once, or ever, and experience has taught us that public expenditures aren't the ideal way to approach this kind of a challenge anyway. But encouraging -- and incentivizing -- private enterprise to make capital investments on this scale is the federal government's proper function. There are many steps government can take to grow and protect an alternative-fuels industry. For starters, one immediate risk to such a nascent industry is a counter-attack from powerful predators, such as oil exporters and multinational oil companies. It is essential to the long-term survival of the industry that it be protected from a reactionary drop in prices. One potential mechanism for protection is the establishment of a price floor for crude oil. The floor price could be set to ensure that domestic alternatives, including fuel produced from biomass, could compete with foreign oil even in a falling market. There are many ways to achieve this effect, but one straightforward approach would be an import tariff, which would help support not only alternative fuels but also the domestic oil and gas industries that have higher extraction costs than its overseas competitors.

### General Alt Energy

#### Investing in new infrastructure to process alternative fuels will be an economically competitive to oil

**Reynolds 11** [Lewis Reynolds, Politics Daily: Breaking the Chains: 6 Solutions for Ending Dependence on Foreign Oil, http://www.politicsdaily.com/2010/09/07/breaking-the-chains-6-solutions-for-ending-dependence-on-foreig/ // Access: July 1st 2012 // BP]

1. Invest in new infrastructure to process alternative fuels. There's little dispute over the feasibility of manufacturing liquid fuels from non-petroleum sources. Brazil is energy independent thanks, in no small part, to production of ethanol from sugarcane. Germany relied on coal during World War II. South Africa continues to tap coal and natural gas using the technology developed during years of isolation resulting from apartheid. The same technology is capable of producing fuels here in the United States -- and decades of research and the emergence of nanotechnology make energy produced this way much more affordable and economically competitive with oil-based fuels. The technology is simple. Gasification, the process of taking an organic material (such as coal or biomass) and converting it to a mixture of gases, is the first step. There are already multiple competing commercial technologies and at least 20 plants in operation or under construction in the United States alone, mostly in the chemical industry. Using a separate but related technology, the gases manufactured using this process can be converted to form a wide range of fuels, including those already most familiar to Americans and compatible with the existing vehicle fleet and infrastructure: diesel, jet fuel, gasoline components, and ethanol. Contrary to conventional wisdom, production of fuel in this manner can be economical and highly profitable. While the level of capital investment is indeed significant -- higher than a comparably-yielding oil refinery -- capital cost is spread over the long life of a plant, and savings show up in other places. Even with the cost of raw materials, energy inputs, and depreciation of the plant included, the break-even cost of producing fuel is around $1.25 per gallon, an amount notably lower than the current wholesale price of gasoline and other liquid fuels.

### Natural Gas

#### Natural gas solves oil dependence

Norris 6-22

[Floyd, “Why not put natural gas in U.S. cars?; High & Low Finance”, The International Herald Tribune, June 22, 2012, L/N, javi]

The fuel is cheap and plentiful. But there is little infrastructure to deliver it to users, and so there is little demand for the equipment to use it. That, in brief, is what is wrong with the U.S. market for vehicles powered with natural gas. And in those facts could be the genesis of an idea for a program that would create jobs, save money for consumers and reduce the United States' dependence on foreign oil. If there were natural gas filling stations along the interstate highway system, the trucking industry would almost certainly begin to buy trucks to use the fuel. But of course, since there are few such trucks now, the first such stations would have few customers when they opened, meaning they would seem like dubious commercial ventures. So why not have the government, which can borrow money for almost nothing - about three-quarters of 1 percent for five years - put up money to subsidize such stations? Doing so would provide jobs for construction workers, and thus amount to economic stimulus that could really affect a depressed area of the economy. The unemployment rate for construction workers is 14.2 percent, far above the rate for the rest of the economy. As demand for such vehicles rose, there would also be demand for workers to make them. The main reason all this makes sense is that fracking - the process in which fluids are injected into the ground to extract resources - has produced abundant natural gas and driven prices down. A couple of decades ago, it was taken for granted that in the long run, natural gas should cost more than oil, on an energy-equivalent basis. Perhaps natural gas should cost 120 percent as much as oil, we thought then. But the U.S. natural gas market is a North American one, because there is little capacity to export gas, while the oil market is a global one. With the current gas glut, a few weeks ago the wholesale American natural gas price fell to as little as 11 percent of the price of oil. The price of crude oil has slipped recently, amid signs of a global economic slowdown, but natural gas still costs less than 20 percent as much as oil. There is nothing new about the idea of widespread use of natural gas vehicles. ''In 1975,'' recalled Frank G. Zarb, who was President Gerald Ford's energy czar, ''I thought there would be a fight between the electric car and the natural gas car.'' Nor are government efforts to stimulate the market anything new. The Energy Policy Act of 1992 mandated that some fleets buy such vehicles. But then natural gas prices rose, and oil prices fell. The world entered a prolonged period of relatively cheap oil - the average price was less than $19 a barrel during the six years from the end of 1992 through the end of 1998 - and both politicians and citizens stopped worrying much about it. But natural gas vehicles never went away. Although some local fleets that bought such vehicles as a result of the 1992 law later got rid of them, others did not. A substantial part of the market for city buses and garbage trucks is now filled by natural gas vehicles. Such fleets can provide their own infrastructure, with refueling stations. There are about 130,000 natural gas vehicles in the United States, about 1 percent of the worldwide total of 13 million, according to Kathryn Clay, the executive director of the Drive Natural Gas Initiative, a project financed by natural gas producers and pipelines. There are not many vehicles aimed at consumers who cannot provide their own infrastructure. Honda is selling a natural gas version of the Civic, but it is being marketed only to fleets that already have natural gas terminals. In Europe, there are numerous bi-fuel vehicles that can use either natural gas or gasoline, much as hybrid cars can use either gasoline or electricity, but they are only starting to arrive in the United States. American car companies have announced bi-fuel pickup trucks, but the market for them will primarily be companies with their own infrastructures. That is kind of amazing. It is as if gasoline vehicles were sold only to those who could afford to build and operate their own gas stations. Christopher R. Knittel, a professor of energy economics at the Massachusetts Institute of Technology, said the government should take several steps to promote the use of natural gas in vehicles. One would be to encourage local natural gas utilities to open up their own stations to sell gas for vehicles. He would also like to encourage people to buy their own equipment to compress natural gas at home, using the gas already delivered through pipelines. ''Markets work when prices reflect the social cost of the products,'' Mr. Knittel said during an interview. ''For a variety of reasons, the cost of gasoline now does not reflect all of those costs.'' If natural gas did become widely available and widely used in vehicles, several things would happen. Natural gas prices would rise, of course, which is why the natural gas industry is eager for that to happen. That would offend the chemical industry and also might alarm homeowners who heat with natural gas. It would reduce the U.S. trade deficit and, by lowering the use of oil, put a damper on that market. Natural gas prices are now so low that it is possible the market will develop without government help. A number of plans have been announced to build refueling stations near major highways, in hopes of attracting trucking companies that use those routes. But given the need for quick action - last year the United States spent $750 billion importing oil and oil products - it makes sense for the government to move as quickly as possible.

### Energy Crops

#### Energy crops like switchgrass and arundo can supplement foreign oil –doesn’t hurt food supply like ethanol

**Reynolds 11** [Lewis Reynolds, Politics Daily: Breaking the Chains: 6 Solutions for Ending Dependence on Foreign Oil, http://www.politicsdaily.com/2010/09/07/breaking-the-chains-6-solutions-for-ending-dependence-on-foreig/ // Access: July 1st 2012 // BP]

3. Grow "energy" crops. Once we've exhausted the country's existing supply of biomass, we will need a consistent and sustainable source of additional biomass -- and that will require cultivating so-called "energy crops." The U.S. already produces ethanol from corn, making it the first crop grown here specifically for the production of energy. Unfortunately, the use of corn for ethanol has several distinct disadvantages, the most important of which is its relative land efficiency. To supplant all foreign oil using corn ethanol (currently the most popular non-petroleum fuel, by far), a total of 561 million acres would need to be planted in corn, an expanse that represents nearly 30 percent of the total land area of the contiguous 48 states. The solution is finding alternative crops with much higher yields. There are quite a few varieties of grasses and a few types of trees that produce enough biomass material to make their growth substantially more land-efficient than corn. Two examples include switchgrass and arundo (a perennial grass). Their use also negates one main argument against using corn and other energy crops for fuel: that their use could diminish the world's food supply. As long as productive food-producing land is not taken out of cultivation, the addition of arundo and switchgrass to the agricultural scheme should have very little effect on food production.

### Nuclear Power

#### Legislative policies encouraging nuclear power plant development will compete with oil without greenhouse emissions

**Reynolds 11** [Lewis Reynolds, Politics Daily: Breaking the Chains: 6 Solutions for Ending Dependence on Foreign Oil, http://www.politicsdaily.com/2010/09/07/breaking-the-chains-6-solutions-for-ending-dependence-on-foreig/ // Access: July 1st 2012 // BP]

Renew efforts to develop new nuclear power. Nuclear plants have proven remarkably safe in the United States, and they offer power-generating capabilities at competitive prices without any discharge of greenhouse gases. For this reason and because power demands in the United States will continue to increase, the construction of new nuclear plants should be encouraged through legislative policies. During the 2008 presidential campaign, John McCain called on the United States to commit to building 45 new nuclear power plants by 2030. Barack Obama, breaking with many at his own party, vowed at his nominating convention in Denver to "set a clear goal as president . . . [to] tap our natural-gas reserves, invest in clean coal technology and find ways to safely harness nuclear power." Both men were right.

**Nuclear power plant development would eliminate foreign oil dependency and carbon emissions while creating jobs**

**Eifler 10** [Jeff Eifler, Pittsburgh Post –Gazette: NUCLEAR SOLUTION, http://search.proquest.com.proxy.lib.umich.edu/docview/821261858 // Accessed: July 1st 2012 // BP]

I have followed the PG series on air pollution, especially that caused by the power houses in the area. I have a cure for it all -- nuclear energy. Instead of managing the present problem, we need to create a solution. Renewable energy (i.e., wind and solar energy) are the buzzwords of today, but to use these methods of sustaining power to entire cities is still off in the future. By building new nuclear power plants, we can solve a couple of problems at once. First, the carbon emissions are eliminated; second, we start to eliminate our dependency on "foreign oil"; third, this plays into the Obama stimulus of rebuilding the infrastructure of the country and putting people to work for a long time. The fear that a Chernobyl-esque accident could happen in this country is an unfounded fear. The United States is using a completely different technology than the Russians do for harnessing the power of uranium for creating electricity. Nuclear power is the way to go. It will ensure a clean, safe environment for generations to come and create jobs for years to come.

### TDP

#### Thermal Depolymerization solves fossil fuel dependence and disease

Trounson 04

[Jim, has a 4 year Mechanical Engineering degree from McGill University , “Thermal Depolymerization: Energy-Crisis Solution”, 3-31-12, http://www.thermaldepolymerization.org/#other\_processes\_tried, javi]

Fortunately there does seem to be a solution. Thermal Depolymerization (TDP) is a process which seems to be able to convert any organic material into any product now produced from oil. Organic materials include wood, leaves, grass, food, paper, plastic, paint, cotton, synthetic fabrics, sludge from sewage, animal parts, bacteria, any carbohydrates, or hydrocarbons. These are all materials which we now send to landfill with the exception of metal, ceramics, and glass. Also included is all agricultural waste which is now burned in the fields or buried. Products currently produced from oil include natural gas, propane, kerosene, gasoline, diesel fuel, jet fuel, home heating oil, and lubricating oil. With further processing, plastics, paints, refrigerants, and thousands of other chemicals used in industry are produced. So, it turns out that TDP will convert our landfill and agricultural waste into the same products which are currently produced from fossil oil. All of our existing equipment can be powered in the same way and landfill will be eliminated. Seems too good to be true right? Wait, there's more. TDP is a form of solar energy. Sunlight converts H2O and CO2 into carbohydrates in living plants and also gives off Oxygen in the well know process of photosynthesis. In a completely TDP based economy the amount of CO2 produced when fuels are burned is exactly balanced by the plants grown to be used for TDP feedstock. In other words, it is a closed system, there is no net gain in CO2 levels, regardless of how much fuel we produce and burn. In fact, TDP could theoretically be used on the Moon, Mars, and maybe even to maintain a habitat during space travel to other stars. There's still more. The amount of energy hitting the Earth is about 5000 times more than the entire amount of energy used by all human activity. Even at a 1% solar energy efficiency rate there is the potential for many times our current energy use. With optimum use and a mature TDP technology, the Earth might comfortably support 10 times its current population at a high standard of living. There is enough biomass existing now accessible on the surface of the earth to provide 100 years of human energy use. Even more. TDP occurs under conditions of temperature and pressure absolutely guaranteed to kill all living things including any microbe or virus. In turn, diseases such as mad cow are eliminated. TDP energy farms can be used as a habitat for other species and as recreational space for people. TDP plants can be located near agricultural waste, landfills, and markets reducing transportation cost and risk. TDP based energy can be produced anywhere the sun shines.

#### TDP solves – more efficient and recent breakthroughs prove

Caldwell 03

[Marla, “ May 8, “Thermal Depolymerization: Is It Is or Is It Ain't”, 5-8-3, http://blogcritics.org/politics/article/thermal-depolymerization-is-it-is-or/, javi)

Up until recently, TDP was impractical because of high processing costs, low yield, impurity of yield, high energy input requirements or other problems, depending on the particular methods and equipment used. The excitement now is because Appell claims to have developed an efficient TDP process that is self-fueling and has a high-quality, high-volume yield, according to feedstock. This report (Thermochemical Conversion Of Swine Manure To Produce Fuel And Reduce Waste by Zhang, Riskowski, and Funk), while lacking in grace and in want of an editor, has a fairly lay-accessible description of the process as undertaken by the authors as well as information regarding the need for such a process and the results of other experiments. Appell and colleagues (1980) focused on converting organic wastes to oil in batch and continuous mode. The results show that bovine (dairy) manure was not readily to be converted to oil at 250°C or lower, but with the treatment of CO and steam at 380°C and 40 MPa (6,000 psi) resulted in high conversions of dairy manure to oil. The conversion rate was 99% and the oil yield was 47%... Another important finding in Appell's research is the function of water in the thermal conversion process as a solvent and a reactant. This is even more important in the conversion of livestock manure slurry where a large quantity of water exists and dewatering is infeasible costly. Taking advantage of water content in raw manure will greatly value the conversion process, not only producing energy but also lightening the wastewater intense from livestock farm... Through thermochemical conversion technology, the conversion rate of organic matter in the raw manure can be as high as 90% or more (Appell et al., 1980; White and Taiganides, 1971). The solids and the wastewater are separated and COD in the wastewater is greatly reduced. The successful TCC processor shall be an on-site unit that directly processes fresh manure from the barn. Thus, much less storage is required. TCC processor will be compact and much less space occupying than those of biological treatment processes such as lagoons and digesters do. Another benefit of such a short period of manure storage time is the odor reduction – less storage time means less odor emission. As a successful TCC unit for a large confinement hog farm, the energy needed for running the processor is most likely self-sustainable, i.e., the liquid fuel produced from the TCC processor could be used as the energy input for the processor needs. With the major portion of the organic solids removed from the swine manure, the post-processes waste is most possibly suitable for municipal treatment with a simple pre-treatment. The solid residues are greatly minimized and convenient for disposal.

#### TDP happens naturally – no risk of a solvency deficit

Birger 03

[Jon, “Can This Tiny Energy Company Really Change The World? EMPTY THE LANDFILLS! TURN OLD TIRES INTO HOT COMMODITIES! ELIMINATE TOXIC WASTE! KEEP A LID ON MAD COW DISEASE! SAY HASTA LA VISTA TO OPEC! SAVE THE ALASKAN WILDERNESS! BUT WAIT, THERE'S MORE!” CNN Money. 7-1-03, http://money.cnn.com/magazines/moneymag/moneymag\_archive/2003/07/01/344701/index.htm, javi]

A WET SOLUTION Using heat and pressure to convert organic material into liquid petroleum is not some modern-day alchemistic scheme. The earth has been performing this feat for millions of years, turning the remains of prehistoric life forms into the crude oil we pump out of the ground today. Since the 1960s, scientists have been able to replicate the earth's magic by super-heating organic matter until it breaks down at the molecular level and changes from fiber, proteins and carbohydrates into the hydrocarbons that comprise oil. Before TDP, however, all such technologies (the best known of which makes ethanol from corn) consumed almost as much energy as they produced--if not more. This has long been the Achilles' heel of renewable energy. Solar power, for example, costs twice as much money to produce as electricity generated by fossil fuels does. And while researchers have made huge strides in producing methane from biomass, they've yet to figure out how to transport it cost-efficiently. Inventor Baskis, 52, a biologist by training, was keenly aware of these challenges when he joined an Illinois renewable energy start-up 20 years ago. "The economics are the most important part of any process," he says. "What's physically possible isn't always economically feasible." In the waste-to-oil arena, the major stumbling block had been the high cost of removing water from the raw materials. Rather than evaporating the water, Baskis decided to use it to facilitate decomposition. With TDP, waste products and water are put into a grinder, and the resulting slurry is cooked under high pressures and temperatures. Not only was Baskis' process more energy-efficient--water conducts heat better than air does--but it also produced a higher-quality product. "Water provides hydrogen terminals that aid in the breakdown of organic material," he says. "You get nice, short hydrocarbon molecules instead of big macro molecules like coal or tar." Perhaps because his use of water ran counter to the prevailing wisdom in petroleum chemistry, Baskis initially had a hard time attracting investors. As a scientist from the Gas Technology Institute would later tell Appel, "We just spent 100 years taking the water out of the oil, and now you want to put it back in to make a better product?" In 1997, Appel, a private investor at the time, learned of Baskis through a mutual acquaintance, and he was so impressed with TDP that he acquired the patents from Baskis (who retains a large equity stake in Changing World) and began tapping his contacts for the funding he'd need to build a prototype plant.

#### TDP solves oil dependence and global warming

Katers 3

[John, University of Wisconsin and David Drew at STS Consultant, “Anything into Oil”, 6-8-03, http://www.spiritofmaat.com/announce/newoil.htm, javi]

With a new technology, called Thermal Depolymerization, we may soon be able to do just that. According to Brian Appel, chairman and CEO of Changing World Technologies, "This process can deal with the world's waste. It can supplement our dwindling supplies of oil. And it can slow down global warming." The first industrial-scale Thermal Depolymerization plant was built in Carthage, Missouri, adjacent to a Butterball Turkey processing plant. Each day, two hundred tons of turkey remains are hauled to the newly-finished plant and transformed into assorted functional products — including 600 barrels of light crude oil. This remains-derived oil is chemically almost identical to a number two fuel oil used to heat homes. James Woolsey, former CIA director and an adviser to Changing World Technologies, maintains that this technology offers the beginning of a way out of the United States' dependence on foreign oil. Thermal Depolymerization, according to Appel, has proved to be 85% energy efficient for complex feed stocks such as turkey remains. "That means for every 100 BTUs in the feedstock, we use only 15 BTUs to run the process." Plastics and dry raw materials efficiency is even higher, contends Appel. So how does this process work? "The other processes," Appel said, "all tried to drive out water. We drive it in, inside the tank, with heat and pressure. We super-hydrate the material." In this process, pressures and temperatures need only be modest, because water assists to convey heat into the feedstock. "We're talking about temperatures of 500 degrees Fahrenheit and pressures of 600 pounds for most organic material — not at all extreme or energy intensive. And the cooking times are relatively short, usually about fifteen minutes." Phase two involves dropping the slurry to a lower pressure, which releases about ninety percent of the slurry's free water. Dehydration via depressurization is far cheaper in terms of energy consumed than is heating and boiling off the water, particularly because no heat is wasted. At this stage, the water is sent back up to heat the next incoming stream. The minerals settle out and are forced to storage tanks. Rich in calcium and magnesium, this dry brown powder is "a perfect balanced fertilizer," Appel said. The remaining organic soup is flushed into the second stage reactor, similar to the coke ovens used to refine oil into gasoline. This reactor heats up the soup to about nine hundred degrees Fahrenheit — to further break apart long molecular chains. Next, in vertical distillation columns, hot vapor flows up, condenses, and flows out from different levels: gases from the top of the columns, light oils from the upper middle, heavier oils from the middle, water from the lower middle, and powdered carbon — used to manufacture tires, filters, and printer toners — from the bottom. The test plant in Philadelphia has determined that the process is scalable; plants can cover acres or be small enough to go on the back of a flatbed truck. The technicians at this test plant have spent three years testing different kinds of affluent to formulate recipes. Experimentation revealed that different waste streams required different cooking and coking times. European countries have prohibited the feeding of animal wastes to other animals — a common practice for poultry in the U.S. (although since 1997, because of Mad Cow Disease, the U.S. has prohibited most feeding of recycled animal waste to cattle). "In Europe, there are mountains of bones piling up," says Alf Andreassen, an investor. "When recycling waste into feed stops in this country, it will change everything." "It is the perfect process for destroying pathogens," said Appel. "This process will make 10 tons of gasoline per day, which will go back into the system to make heat to power the system. It will make 21,000 gallons of water clean enough to discharge into a municipal water system. Pathological vectors will be completely gone. It will make eleven tons of minerals and six hundred barrels of oil — high-quality stuff, the same specs as number two heating oil." And he added, "It's amazing the Environmental Protection Agency doesn't even consider us waste handlers. We are actually manufacturers, that's what the permit says." The new technology also promises profitability. "We've done so much testing in Philadelphia, we already know the costs," Appel said. "This is our first out plant, and we estimate we'll make oil at fifteen dollars a barrel. In three to five years, we'll drop that to ten dollars, the same as a medium-size oil exploration and production company. And it will get cheaper from there." If Thermal Depolymerization works, as expected, it will clean up waste and generate new sources of power. Its supporters contend it could also reduce global warming. According to global warming theory, as carbon, in the form of carbon dioxide, accumulates in the atmosphere, it traps solar radiation, which warms the atmosphere, and some say disrupts the planet's ecosystems. If the shift to global Thermal Depolymerization takes place, any carbon in the earth would stay there. The trappings of the civilized world — plants, domestic animals, artificial objects, buildings — would then be regarded as temporary carbon basins. Says Paul Baski, inventor of the Thermal Depolymerization process, "We would be honoring the balance of nature."

# Aff – Oil Prices

## Offense

### Food Prices Impact

#### **higher oil prices increase food prices –increase distribution costs and demand for biofuels that put pressure on food supply**

Allen 12 [Katie Allen, The Guradian: Economics Blog: Oil prices: 10 reasons to be fearful, <http://www.guardian.co.uk/business/economics-blog/2012/mar/02/oil-prices-10-reasons-to-be-fearful> // Accessed: July 6th 2012 // BP]

1. Higher petrol prices: Given the typical relationship between petrol prices on the forecourt and the price of crude oil, if the latter did move up to $150 a barrel, we could expect the price of petrol a litre to move up from around £1.34 to over £1.50 – a new record high by a significant margin. That is bad news for both inflation and consumer confidence. 2. Higher household energy bills: Gas and electricity prices typically take a steer from the price of oil. If oil rises sharply, it is more likely than not that household energy bills will rise at some point. Indeed, the price of gas traded in the wholesale market has risen by at least 10% over the period since oil has been surging. Timing is key. In continental Europe, particularly France, when oil prices move, household energy bills typically adjust very promptly. By contrast, in the UK, price hikes are unusual at the end of winter. This is because utility providers will get lots of bad press, but not much increase in profit margins as households switch off their central heating for summer. If, however, elevated oil prices persist until the autumn, then utility bill hikes at that point will become more likely. 3. Higher food prices: A fair proportion of the cost of food is distribution, fuel for farm vehicles and petro-chemicals. Furthermore, the emergence of bio-fuels means that higher oil prices has tended to exert upward pressure on agricultural commodity prices, since these can be used as a substitute for oil. Higher agricultural prices typically mean higher food prices in household shopping baskets. 4. Risk of persistently high inflation: All in all, we calculate that in a scenario where oil prices surge to $150 per barrel, CPI inflation in the UK would be at least 1% higher at the end of this year than we have assumed in our base case. That would mean inflation ends the year a little above 3% rather than the near 2% that we and most other forecasters assume. 5. The value of savings is eroded: If inflation out-paces interest rates, then it means the 'real' value of savings will fall. For example, with interest rates around 0.5% but inflation running at 4%, the real return on savings is falling.

#### **Increased demand for biofuels raises worldwide food prices –sends millions into poverty and creates political instability**

Rosenthal 11 [Elisabeth Rosenthal, The New York Times: Environment: Rush to Use Crops as Fuel Raises Food Prices and Hunger Fears, <http://www.nytimes.com/2011/04/07/science/earth/07cassava.html> // Accessed: July 6th 2012 // BP]

The starchy cassava root has long been an important ingredient in everything from tapioca pudding and ice cream to paper and animal feed. Thailand's cassava goes mainly to China, which has sought new energy sources to power growth. But last year, 98 percent of cassava chips exported from Thailand, the world’s largest cassava exporter, went to just one place and almost all for one purpose: to China to make biofuel. Driven by new demand, Thai exports of cassava chips have increased nearly fourfold since 2008, and the price of cassava has roughly doubled. Each year, an ever larger portion of the world’s crops — cassava and corn, sugar and palm oil — is being diverted for biofuels as developed countries pass laws mandating greater use of nonfossil fuels and as emerging powerhouses like China seek new sources of energy to keep their cars and industries running. Cassava is a relatively new entrant in the biofuel stream. But with food prices rising sharply in recent months, many experts are calling on countries to scale back their headlong rush into green fuel development, arguing that the combination of ambitious biofuel targets and mediocre harvests of some crucial crops is contributing to high prices, hunger and political instability. This year, the United Nations Food and Agriculture Organization reported that its index of food prices was the highest in its more than 20 years of existence. Prices rose 15 percent from October to January alone, potentially “throwing an additional 44 million people in low- and middle-income countries into poverty,” the World Bank said. Soaring food prices have caused riots or contributed to political turmoil in a host of poor countries in recent months, including Algeria, Egypt and Bangladesh, where palm oil, a common biofuel ingredient, provides crucial nutrition to a desperately poor populace. During the second half of 2010, the price of corn rose steeply — 73 percent in the United States — an increase that the United Nations World Food Program attributed in part to the greater use of American corn for bioethanol. “The fact that cassava is being used for biofuel in China, rapeseed is being used in Europe, and sugar cane elsewhere is definitely creating a shift in demand curves,” said Timothy D. Searchinger, a research scholar at Princeton University who studies the topic. “Biofuels are contributing to higher prices and tighter markets.” In the United States, Congress has mandated that biofuel use must reach 36 billion gallons annually by 2022. The European Union stipulates that 10 percent of transportation fuel must come from renewable sources like biofuel or wind power by 2020. Countries like China, India, Indonesia and Thailand have adopted biofuel targets as well. To be sure, many factors help drive up the price of food, including bad weather that ruins crop yields and high oil prices that make transportation costly. Last year, for example, unusually severe weather destroyed wheat harvests in Russia, Australia and China, and an infestation of the mealy bug reduced Thailand’s cassava output. Olivier Dubois, a bioenergy expert at the Food and Agriculture Organization in Rome, said it was hard to quantify the extent to which the diversions for biofuels had driven up food prices. “The problem is complex, so it is hard to come up with sweeping statements like biofuels are good or bad,” he said. “But what is certain is that biofuels are playing a role. Is it 20 or 30 or 40 percent? That depends on your modeling.”

### Exts – Increases Prices

#### **Higher oil prices increases demand for biofuels –raises biofuel prices due to inflation and competition**

Rosenthal 11 [Elisabeth Rosenthal, The New York Times: Environment: Rush to Use Crops as Fuel Raises Food Prices and Hunger Fears, <http://www.nytimes.com/2011/04/07/science/earth/07cassava.html> // Accessed: July 6th 2012 // BP]

While no one is suggesting that countries abandon biofuels, Mr. Dubois and other food experts suggest that they should revise their policies so that rigid fuel mandates can be suspended when food stocks get low or prices become too high. “The policy really has to be food first,” said Hans Timmer, director of the Development Prospects Group of the World Bank. “The problems occur when you set targets for biofuels irrespective of the prices of other commodities.” Mr. Timmer said that the recent rise in oil prices was likely to increase the demand for biofuels. It can be tricky predicting how new demand from the biofuel sector will affect the supply and price of food. Sometimes, as with corn or cassava, direct competition between purchasers drives up the prices of biofuel ingredients. In other instances, shortages and price inflation occur because farmers who formerly grew crops like vegetables for consumption plant different crops that can be used for fuel.

## Answers to

### AT: Renewables Turn

#### **High oil prices don’t create a transition to renewable energy –alternative cheap fossil fuels discourage transition**

Polczer 11 [Shaun Polczer, Center for Global Energy Studies: Renewable energy still too expensive, says report, <http://www.cges.co.uk/media/articles/2011/04/07/renewable-energy-still-too-expensive-says-report> // Accessed: July 6th 2012 // BP]

Despite high oil prices, fossil fuels will continue to trump renewable energy sources such as solar and wind power without massive government subsidies, a new investment bank says. A report by Calgary-based AltaCorp Capital says the “economic realities” of oil and natural gas mean that the world will remain largely dependent on non-renewable energy sources for the foreseeable future. Author John Mawdsley said he didn’t set out to make a case for oil and gas, but found that hydrocarbon fuels are by far the most cost efficient on an energy equivalent basis compared to solar, biofuels and wind power. “We didn’t have any particular bias, but we were surprised by some of the things we found,” he said in an interview. Despite massive government subsidies, so-called “green” energy such as wind, solar, and biomass accounts for about four per cent of global energy consumption. On an barrel of oil equivalent basis, an equal amount of solar power would cost about $450 a barrel even after factoring carbon dioxide costs of about $50 per tonne — which Mawdsley noted is more than double the current price of emission credits in Europe and three times higher than the Alberta government’s $15 per tonne levy on emissions. In that context, expensive oil sources such as the oilsands remain relatively cheap. “Due to the practical and economic realities, we believe high oil prices are here to stay, which will continue to make Canada’s conventional oil and oilsands companies attractive investments.” There are also ethical considerations. Even though corn-based ethanol and soya biodiesel are cheaper than nuclear power and coal-fired electrical generation, Mawdsley notes that the amount of land under “fuel cultivation” in the U.S. is enough to feed 150 million people. Electrical cars might reduce tailpipe emissions, but could be considered “coal-fired” if they increase demand for dirtier burning electricity. “There are trade-offs,” he said. AltaCorp. is the new investment bank and research house formed by Tristone Capital founder George Gosbee late last year. The firm, which is partially owned by ATB Financial, has a mandate to invest in emerging Alberta companies in the areas of energy, alternative energy and agriculture.

Mawdsley said the comparison highlights the economic disparities between energy sources, but also the opportunities for innovators to reduce the gap on some of the higher cost energy sources. The report also notes the “tragedy of the hydrocarbons,” where cheap oil and gas discourages a transition to cleaner fuels. “The tragedy lies in the reality that people will continue to use and deplete the non-renewable hydrocarbons even though it is not in the best long-term interest of the individual society, mankind or the planet for this to continue.” But some observers argue that higher oil prices are already prompting the shift to cheaper alternatives and altering consumption behaviour. Oil hit fresh 30-month highs on Wednesday, rising as high s $109.15 before settling at $108.83, up 49 cents on the day. European-traded Brent continues to remain above $121.Despite a report from the U.S. government showing a two million barrel stock build in U.S. inventories, the price gains came amid continued conflict in troublespots like Libya and Yemen and higher demand estimates from China.

Speaking at a conference in London, former Saudi Arabian oil minister Sheik Yamani said oil could hit $200 to $300 if unrest spreads to the world’s largest oil producer. “If something happens in Saudi Arabia it will go to $200 to $300. I don’t expect this for the time being, but who would have expected Tunisia?” Yamani told Reuters on the sidelines of a conference of the Centre for Global Energy Studies (CGES) which he chairs.

“The political events that took place are there and we don’t expect them to finish. I think there are some surprises on the horizon.”

#### High oil prices don't have much impact on alternative energy investment –stock price simulation proves

Henriques and Sadorsky 07 [Irene Henriques and Perry Sadorsky: Oil prices and the stock prices of alternative energy companies, <http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0140988307001399> // Accessed: July 8th 2012 // BP]

There are several important factors, like energy security issues and environmental concerns, shaping the interaction between business, society and the environment which should generate a positive business environment for companies engaged in the production and distribution of alternative energy. Although this bodes well for the industry in the long run, a better understanding of the relationships between oil prices and financial performance of the alternative energy industry is critical to understanding the development of the alternative energy industry in the years to come. In this paper, a four variable vector autoregression model is developed and estimated in order to investigate the empirical relationship between stock prices of alternative energy companies, technology stock prices, oil prices, and interest rates. Granger causality tests show that even though the model is estimated over a relatively short time period, movements in oil prices, technology stock prices, and interest rates each have some power in explaining the movements of the stock prices of alternative energy companies. Simulation results show the stock prices of alternative energy companies to be impacted by shocks to technology stock prices but shocks to oil prices have little significant impact on the stock prices of alternative energy companies. These results add to a small but growing literature showing that oil price movements are not as important as once thought because investors may view alternative energy companies as similar to other high technology companies. These results should be of use to investors, managers and policy makers. Investors in technology have a wide array of products to choose to invest in from entertainment oriented devices that easily appeal to large numbers of consumers to new energy supply products. One day alternative energy companies could be seen as mainstream energy companies but at the present mass adoption of alternative energy is still too far off and uncertain. In the case of electricity generation in the United States, for example, 71% of energy sources come from fossil fuels (50% coal, 18% natural gas, and 3% petroleum), 20% from nuclear power, 7% from hydroelectric, and 2% from renewable sources (wind, solar, biomass) (Economic Report of the President, 2006, page 252). Consequently, alternative energy companies are seen by investors as potential disruptive technology providers and while the potential returns from investing in the alternative energy industry are high so are the associated risks. Governments can help to bring alternative energy products to market by having a clear and supportive alternative energy policy, and a fiscal policy that taxes carbon and subsidizes alternative energy. Government can also boost demand by being early purchasers of alternative energy related products.

#### **Higher oil prices don’t lead to alternative energy investment –leads to more dramatic and heavier fossil fuels to supply the petroleum demand**

Hamilton 11 [Tyler Hamilton, writer for Toronto Star, Clean Break: Higher oil prices aren’t leading to higher clean energy investments… sadly, it’s quite the opposite, <http://www.cleanbreak.ca/2011/05/26/higher-oil-prices-arent-leading-to-higher-clean-energy-investments-sadly-its-quite-the-opposite/> // Accessed: July 8th 2012 // BP]

There’s been a lot of investment and deployment in renewable energy technologies for power generation and for displacing petroleum products, but as far as we’ve come over such a short time, and as much as triple-digit oil prices are helping to accelerate the transition, the disturbing fact is that higher-priced oil is leading to dramatically more investment in dirtier, harder to access and riskier to extract heavy oil. So while we may be experiencing the beginnings of “peak” conventional oil we’re also seeing the word “conventional” being refined to include heavier crude, starting with the oil sands and now moving toward oil shale and heavy oil trapped in aging oil fields of the Middle East. My Clean Break column takes a closer look at this issue and comes to the conclusion that higher fossil fuel prices alone won’t wean us off fossil fuels, it will only make us go for deeper, heavier and more remote resources in an effort to feed our petro addiction. The answer is to put a meaningful price on carbon, impose stricter environmental regulations and eliminate unnecessary incentives for the oil industry. Sadly, we’re heading in the wrong direction and there’s no sign in Canada or the United States of the political will, or public pressure, required to shift course. What we’ve seen so far is window dressing. George Monbiot raised this issue in one of his recent columns. He cited the fact that Fatih Birol, chief economist of the International Energy Agency, revealed in late April that crude oil production peaked in 2006. Yet the global economy didn’t collapse as predicted. Why not? “The reason, as Birol went on to explain, is that natural gas liquids and tar sands are already filling the gap,” Monbiot wrote. ”Not only does the economy appear to be more resistant to resource shocks than we assumed, but the result of those shocks is an increase, not a decline, in environmental destruction.” The problem, Monbiot continued, isn’t that we have too little fossil fuel but too much. “As oil declines, economies will switch to tar sands, shale gas and coal; as accessible coal declines they’ll switch to ultra-deep reserves (using underground gasification to exploit them) and methane clathrates. The same probably applies to almost all minerals: we will find them, but exploiting them will mean trashing an ever greater proportion of the world’s surface.” We’re letting it happen. Until we stop letting it happen, things will continue as they are, despite talk of peak oil and despite rising oil and commodity prices.

#### **High oil prices and renewable energy relationship is not linear –solar and wind tech fluctuate on natural gas, not oil prices**

Fidelity 11 [Fidelity.com, Viewpoints: Energy: time to invest in alternatives?, <https://www.fidelity.com/viewpoints/alternative-energy> // Accessed: July 8th 2012 // BP]

Davydova: In general, rising oil prices have provided a positive as a backdrop for the renewable energy sector. The most direct beneficiary has been the biofuel sector, although it is important to pay attention to the input cost fluctuations for the sector as well — for example, corn and sugar prices. Indirectly, high oil prices may draw political attention to energy security and energy independence, which has benefited solar and wind, even though they are not direct substitutes.

However, I would be careful not to jump to the conclusion that high oil prices necessarily mean stronger performance for renewable energy stocks. For example, many investors expected solar and wind to perform well on high oil prices. While high oil prices certainly help sentiment towards alternative energy resources, it is important to keep in mind that solar and wind technologies are used to produce electricity, and most of the electricity in the United States is generated by coal and natural gas — not oil. U.S. natural gas prices have remained at depressed levels despite higher oil prices globally, making solar and wind less competitive in the U.S. What's more, the price of solar modules and wind turbines has been declining globally, due to unfavorable supply and demand dynamics despite higher oil prices. These are the kinds of cyclical factors you have to be aware of in each sector.

# Neg - Oil Prices

## Defense

### Cant Solve

#### **Price of oil depends of hundreds of factors- plan can’t solve them all**

Davidson 12 –Economics Writer for NPR- (Adam, March 27th, 2012, “The Real Oil Shock,” The New York Times, http://www.nytimes.com/2012/04/01/magazine/rising-gas-prices-dont-actually-affect-americans-behavior.html)

Every day, U.S. drivers pay a price determined by forces all over the world that are hard to understand and harder for the United States to control. Even if we invested in better refineries and exploited every possible energy source, from the Keystone pipeline to the Alaskan wilderness, the impact could be minimal. It could eventually lower prices at the pump — but only if nothing else affects them, like OPEC lowering its production to drive prices back up again. The price of oil is, of course, affected by hundreds of interrelated factors. “The folks on the right say: ‘Drill here! Drill, drill, drill!’ But that will not impact the global price of oil,” says Gal Luft, co-director of the Institute for the Analysis of Global Security. “How do I know? Because we had this great experiment for seven years where our dependence on oil declined from 60 percent to 45 percent. We import much less percentage-wise than we did 10 years ago. What happened to the price of oil? It doubled.” And the left, Luft says, isn’t offering any better solution. “When they talk about solar and wind and things like that, it’s like applying Prozac to a cancer patient,” he says. “It has nothing to do with the problem.” Many analysts I’ve spoken with suggest that oil prices should fall fairly soon. This will be welcome news to the less-fortunate American families who are not impervious to the price at the pump and to anyone who claims to be pinching pennies because of gas. But as unpopular as it may sound, the best possible future for most Americans may involve much higher gas prices. As billions of people, throughout the world, enter the middle class in the coming decades, there will be an enormous increase in the demand for gas. This, along with rising environmental considerations, is likely to send the prices far higher than they are today. But at that point, we will all probably be driving solar-powered hovercars anyway.

### a/t: Econ Impact

#### No impact to high oil prices- economy and growth will adjust

OGJ 11 (June 27th, 2011, “IEA: High oil prices, economic growth can coexist,” [Oil & Gas Journal](http://search.proquest.com.ezproxy.baylor.edu/pubidlinkhandler/sng/pubtitle/Oil%2B%2426%2BGas%2BJournal/%24N/41221?accountid=7014) 109. 13c, ProQuest) /HL

The juxtaposition of triple-digit oil prices and 4-5% global economic growth looks paradoxical, but it partly reflects the time lags that affect oil market dynamics, the International Energy Agency said in its latest medium-term oil and gas markets report. High oil prices, buoyant economic growth, and climbing oil-demand growth can coexist for a while, the Paris-based agency said, and then the market will ultimately adjust to the higher prices. The price inelasticity of oil underpinned the recent, extended upward price shift in the face of both resilient demand growth in developing countries and perennial supply-side risks, IEA noted. The report, which examines market prospects through 2016, said that the market's supply flexibility with spare production capacity and oil inventories among the developed countries of the Organization for Economic Cooperation and Development has diminished despite increased upstream activity and resurgent supply from outside the Organization of Petroleum Exporting Countries. Most analysts underestimated the nearly 3 million b/d postrecession rebound in 2010 oil demand, the agency said. IEA's base case in this medium-term report, with global economic growth averaging at least 4.5%/year, shows a tighter market during 2010-12 than expected in December 2010. Market conditions potentially will ease marginally during the 2013-16 period, although the 4 million b/d spare capacity implied for much of that period looks like a fairly thin supply cushion, the agency warned. Annual growth in worldwide oil demand could average 1.2 million b/d between now and 2016, while natural gas demand could grow by 500 billion cu m, which is about 2.5 times Russia's current gas exports, IEA said. The agency uses an average crude oil price assumption of $103/bbl, or around $20/bbl more than in last year's me-diumterm outlook.

#### High oil prices have no correlation with economic growth

McKillop –Specialist in Energy Policy, Director of Information of the OAPEC Technology Transfer Subsidiary, AREC and Researcher for UN Agencies Focusing on Energy, Economic and Finance Domains- 12 (Andrew, June 13th, 2012, “Why We need Expensive Oil,” http://www.marketoracle.co.uk/Article35124.html)//HL

To some it can seem a joke, but the new definition of "expensive oil" is about $75 a barrel. Even worse fol oil producers, $75 a barrel is rapidly becoming the base price for financially feasible oil production development strategies. Above all, the old paradigm of extreme high oil prices is long dead. It was born from the oil panics of the 1973-81 period, called "oil shocks", and the paradigm says that cheap oil is the Holy Grail of economic growth and full employment, which today are folk memories in the OECD countries, while the linked claim of low inflation flowing from the low-priced barrel has no relation to what is left of the "real economy", and fantastically inflating debt-and-deficit lead balls and chains. These will need massive inflation (or default hidden by a quick changeover of national moneys) in a rapidly approaching period of future time, to be deleveraged. Oil import costs for heavily import-dependent countries and regions (US, Europe, Japan) ranged from 2.2% to 2.7% of GDP in 2011 using IEA data: minuscule numbers compared with sovereign debt servicing and budget deficit financing, either at present or going forward ! Old time oil panic drivers have eroded or even disappeared. In 1973, at the time of the first oil shock the OECD group of countries dependend on oil for 52.6% of their energy, using IEA data. By 2011 this had fallen to 36%. By 2020 the figure may be 30% - 33%, although the IEA pushes the date much further forward, but under any scenario, any theory oil's energy role will be lower than today. Evidently, a high-price oil panic of today, if it comes, will be downsized and diluted relative to previous and well mythologized, less unreal, more credible panics. Still today however we hear claims our political deciders took years to finally home in on the dire reality of our financial situation, and they will need even more years to face the dire reality of our global energy situation: read "energy scarcity". The fact is that now structurally weak, on again/off again Western economic growth over the last decade or 15 years has a sharply declining relation with energy demand, supply and prices, shown by fast declining energy intensity of economic output. Record Asian economic growth in the period 2004-2008, in particular, showed little in the way of negative impacts from oil and energy prices rising to a peak. Only in the period ending about 1985, was the then OECD-dominated global economy's growth fundamentally affected by oil prices.

#### **High oil prices only have a small impact on oil-importing countries –greater revenue will be recycled in other trades or markets**

Blas 11 [Javier Blas, Commodities Editor for Financial Times : The real impact of high oil price, <http://www.ft.com/intl/cms/s/0/b2ae0080-c4b3-11e0-9c4d-00144feabdc0.html#axzz1zD6r3C9H> // Accessed: June 29th 2012 // BP]

Are high oil prices bad for the global economy? Conventional wisdom, firmly anchored in the experience of the oil shocks of the 1970s, says they are. But two economists at the International Monetary Fund have just published a research paper challenging the traditional view, arguing that high oil prices are not a big economic drag. The new analysis ‘Oil Shocks in a Global Perspective: Are they Really that Bad?’ is particularly relevant as global economic growth starts to falter, with some policymakers blaming the impact of high oil prices earlier this year for the slowdown.

The IMF paper also offers a new perspective for studying the global economic impact, rather than focusing just on the US or the developed world, as many other previous studies did. Tobias N. Rasmussen and Agustín Roitman, the two economists at the IMF in Washington, argue in their analysis that although oil prices have “an negative effect on oil-importing countries”, the impact is not as large as previously thought. They say that a 25 per cent increase in oil prices “will cause a loss of real GDP in oil-importing countries of less than half of one per cent, spread over 2–3 years.” Small stuff indeed.“One likely explanation for this relatively modest impact is that part of the greater revenue accruing to oil exporters will be recycled in the form of imports or other international flows, thus contributing to keep up demand in oil-importing economies.”

Their analysis is at odds with the view of other economists, notably James Hamilton who, in his seminal ‘Oil and the Macroeconomy Since World War II’ published in 1983, linked episodes of high oil prices with economic recessions in the US.

The new research is, however, more in line with some other papers, particularly the research by Olivier Blanchard and Jordi Gali – ‘The Macroeconomic Effects of Oil Price Shocks: Why are the 2000s so different to the 1970s?’.

The difference between the results of the new IMF’s analysis and that of the previous studies is due largely to the different nature of the most recent price shock.While in the mid-1970s, early 1980s and 1990-91 high oil prices were the result of large supply disruptions, including the Arab oil embargo, the Iranian revolution and the Gulf war, the rally in oil prices of the last decade is mostly due to strong economic growth propelling oil demand. High oil prices are, therefore, the mirror of high economic growth. Mr Rasmussen and Mr Roitman acknowledge the difference, warning that “the finding that the negative impact of higher oil prices has generally been quite small does not mean that the effect can be ignored”. They add: “Our results do not rule out more adverse effects from a future shock that is driven largely by lower oil supply than the more demand-driven increases in oil prices that have been the norm in the last two decades”. As such, the new paper offers a fresh perspective, but does not resolve an important question: What has been the contribution of the recent surge in prices on the current slowdown? Oil prices have risen, driven by demand in 2010, but also by the loss of supply in 2011 after the civil war started in Libya. The answer is, probably, halfway.

#### **High oil prices don’t affect the US economy –spending much less on gas than in the past, although we’re using more gas than ever**

Hargreaves 11 [Steve Hargreaves, writer for CNNMoney: Rising gas prices aren't as bad as you think, <http://money.cnn.com/2012/03/21/news/economy/gas-prices-impact/index.htm> // Accessed: June 29th // BP]

High gas prices don't hurt as much as they used to, but pain at the pump is just one reason why they are getting so much attention. Gas prices are once again dominating the national debate. But despite rhetoric, high gas prices aren't hurting as much as they used to. In 1981, when oil prices spiked following the Iranian Revolution, gasoline represented nearly 5% of the nation's spending, according to the Bureau of Economic Analysis. In 2011, only 3.7% of spending went to gas, even though prices averaged at their highest level ever that year. In addition to spending less, we're driving more than ever -- 90% more than compared to the early '80s, according to the Federal Highway Administration. This isn't to say high gas prices don't hurt -- they do, especially for people living paycheck-to-paycheck or those that drive a lot. But for the average American household, which has an income of over $62,000 a year, the increase in gas prices represents a relatively small portion of total spending.For example, in 2008 gas prices were all over the news when they hit their all time high. But in 2010 when prices fell people barely mentioned them. Yet spending on gas totaled only $12 more per week in 2008 than in 2010, according to numbers provided by the Bureau of Labor Statistics. That $12 per week is roughly the same amount that BLS figures show people spent on "pets, toys, hobbies and playground equipment." "The incremental expenditure is not that much," said Akshay Rao, a professor of marketing at the University of Minnesota's Carlson Scjhool of Management who has studied gas prices. "But that's not how people think about it." Moreover, today's high prices don't appear to be having a big drag on the economy. Mass transit use rises as gas prices soar Retail spending continues to rise, even stripping out gasoline. It was up nearly 1% in February and 1% in January, not including the big jump in gas prices. "It seems like people are still getting out there and opening up their pocketbooks," said Beth Ann Bovino, deputy chief economist at Standard and Poor's. Bovino thinks prices would have to reach between $4.50 and $5 a gallon to really see an impact in spending. Part of the reason Americans are coping with higher gas prices is that oil makes up a smaller percentage of overall energy use, she said. Oil made up 48% of the nation's energy consumption in 1971, S&P noted in a recent report. Now, thanks to a shift to cheaper natural gas and coal, oil accounts for just 40%.

#### **Impact to oil prices exaggerated –it’s an unpopular commodity the media exploits for a headline**

Hargreaves 11 [Steve Hargreaves, writer for CNNMoney: Rising gas prices aren't as bad as you think, <http://money.cnn.com/2012/03/21/news/economy/gas-prices-impact/index.htm> // Accessed: June 29th // BP]

So why are rising oil and gas prices receiving so much attention? Rao, the marketing professor, identifies three reasons: No one likes to buy gas: Gasoline is a boring commodity, not a flashy new iPhone or pair of jeans. "There's no joy in purchasing gas," said Rao. "People look at it as a tax on driving." Yet, it's one of the few singular products people are regularly forced to buy. Prices are seen everywhere: With gasoline prices posted in giant numbers at gas stations that seem to occupy every intersection, people are exposed to them more than perhaps any other product. Not only are they exposed to them, but prices change so fast and for reasons that aren't always clear. "Why is it $3.49 at one station and $3.69 at another," said Rao. People are encouraged to get mad: The media seizes upon the rising price because it makes a good headline. Political pollsters may also use it to bait people. "Some polling questions seem designed to get people to blame the current president," Rao said. And that, of course, is good news for the opposing political party, which beats the gas price drum ad infinitum. Take advantage of rising gas prices Yet are people really that mad about it? "There's certainly discontent, but I'm not convinced there is real rage," said Rao. After all, most analysts agree: The basic reason why prices have moved higher over the last few years is that the world is using ever more of this product and we have to go to greater lengths to find new supplies. That's expensive. And dangerous -- people actually die in this quest to find new supplies. Many Americans may have at least a vague understanding of that. "But everybody is telling them they should be mad, so they say 'OK,'" said Rao.

## Offense

### Renewable Turn

#### **High oil prices help the environment –reduces congestion, greenhouse gas emission**

Investopedia 11 [Investopedia: Why High Oil Prices Are Good For The Environment, <http://www.investopedia.com/financial-edge/0711/Why-High-Oil-Prices-Are-Good-For-The-Environment.aspx#axzz1zOaCS4HK> // Accessed: July 1st 2012 // BP]

When gasoline zoomed past the stomach-clenching $4 per gallon mark recently, did you cut down on your driving? That answer is probably "yes." After all, when it's costing you $40-$60 (or more) to fill up your tank, you think twice about driving an hour each way to your favorite restaurant in the city, shuttling your kids to the mall, or taking that weekend getaway to the other end of the state. It's just too expensive to waste gas on non-essential driving. (For more information on the cause of high gas prices, check out What Determines Gas Prices?) And you're not alone in your frugality. Every time gas prices climb, demand goes down. Thanks to this spring's price spike, demand has fallen for twelve straight weeks, according to MasterCard's SpendingPulse report. We just don't like paying for gas, especially when it hovers around $4 per gallon. So, our cars end up hanging out in the driveway a lot more. (To learn more about the price at the pump, check out Will Gas Prices Ever Go Down?)

High gas prices may be a frustrating side effect of the nation's oil crisis, but there's actually an upside to sticker shock at the pump - it's good for the environment. Here are three ways this summer's high gas prices are helping Mother Earth. 1. We're Driving Less

As of March 2011, the U.S Department of Transportation reported that highway travel had declined 1.4% from a year ago, making it the first year ever that there was a year-over-year driving decline. In fact, on the West Coast, highway travel decreased by 2.4%. The less we drive, the less oil we consume. Moreover, since we're so reluctant to drive our cars around, more of us are taking public transportation. Public transportation is not only cheaper than driving your own car, it also uses less energy and emits fewer greenhouse gasses per person. The American Public Transportation Association reports that a single person who switches to public transport can reduce their daily carbon emissions by 20lbs, or 4,800lbs per year. And, public transportation in the United States saves 4.2 billion gallons of gasoline every year.2. We're Buying More Efficient Cars The higher gas climbs, the less we love huge SUVs. Sales of larger SUVs keep falling, which is great because not only are they expensive to fill up, they also emit 30% more carbon monoxide and hydrocarbons, and 75% more nitrogen oxides, than passenger cars. In fact, many large SUVs are exempt from "light truck" emission standards because they're so heavy. So even though we drive them as much as we do a light car, they pollute like a heavier industrial truck. But people aren't just down-grading from SUVs to smaller cars - sales of fuel-efficient cars and hybrids are steadily increasing. Ford and Toyota both posted higher sales for their fuel efficient cars and hybrids this spring. (To learn how the price of gas has affected you decision making process, see How Rising Gas Prices Affect Consumer Decisions.) 3. Businesses Conserve More Energy Businesses, too, change their habits as gas prices rise. For instance, many businesses and even some city and state governments have made the transition to a four-day work week. This way, their employees wouldn't have to commute, and buy gas, for that extra day. If workers don't do any driving on their extra day off, this means they're using 20% less gas every week.Working a four-day week also reduces energy consumption because the buildings don't have to be heated or cooled at their normal levels. When the state of Utah transitioned to a four-day week for government workers, the state saved 13% in energy costs. There were also some other surprising benefits: absenteeism and health complaints declined, morale went up, and workers felt more relaxed and enthusiastic about coming in on Monday because they'd had three days off in a row.

The Bottom Line So, what does all this mean for you? High gas prices are, without a doubt, painful, especially for low and middle class families. People often have to make incredibly difficult choices when gas prices climb, but the bright side is that higher prices do have positive benefits for the environment. We consume less oil, we keep more pollution out of the air, and traffic congestion eases. High prices force us to reexamine our habits to make smarter choices. This, in turn, results in a healthier planet for all of us. (We know how gas prices affect each individual, but it is also important to know How Gas Prices Affect The Economy.)

#### **High oil prices lead to renewed and continued interest in renewable energy –viewed as less riskier option**

Hsu 11 [Tiffany Hsu, Los Angeles Times: Interest in renewable energy may stick as oil prices surge, <http://articles.latimes.com/2011/mar/11/business/la-fi-oil-alternate-20110311> // Accessed: July 2nd 2012 // BP]

The latest surge in oil prices may help the renewable energy industry reach a turning point after years of boom-and-bust cycles long dictated by the rise and fall in gas prices. Solar, wind and biofuel investors and analysts said the latest run-up in prices caused by unrest in Libya and other oil-producing nations could lead to lasting interest in alternate sources of energy. They point to several factors converging at the same time that give the industry such hope. Public awareness and worries about climate change, pollution and dwindling resources are at an all-time high. Government funding for alternative energy projects is also on the rise. "This is a crisis that's creating a teachable moment, showing us that we're going in the wrong direction," said Denise Bode, chief executive of the American Wind Energy Assn. "People have been in this situation too many times, and once they see that the alternatives are the real deal, they'll never go back." Concerns that the country's addiction to foreign oil could pose national security risks and that the environment is fraying are stronger than ever, said Bode, who is also the former president of the Independent Petroleum Assn. of America. In California, more than half of the 1.2 billion gallons of gasoline guzzled each month come from foreign sources, according to U.S. government figures. James DiGeorgia, editor of the Gold & Energy Advisor website, said he believes that if countries such as Algeria follow Libya's political upheaval, oil prices could more than double to upward of $200 a barrel. "We've gone from a relatively secure position to a very insecure one," Jim Boyd, vice chairman of the California Energy Commission, said in a statement. "Our exposure to the vagaries and instability of the world oil market has increased by a factor of 10 since the early 1990s." Since then, the renewable energy industry has compiled a stable of high-profile supporters. President Obama said he wants 80% of the energy in the U.S. to come from "clean" sources by 2035. Former Gov. Arnold Schwarzenegger regularly visited wind and solar energy production sites cropping up throughout California. "Why should a dried-up little country like Libya with a crazy dictator play havoc with America's economy and security?" he asked at a recent summit for Advanced Research Projects Agency-Energy, known as ARPA-E, the young Department of Energy program that helps fund early-stage energy research. Various guidelines, mandates and subsidies exist to encourage green energy. California intends to have alternative energy make up 33% of the state's portfolio by 2020. The U.S. Navy plans to run half of its fleet on renewable fuel by 2020."There's no silver bullet, but there is silver buckshot," Bode said. "Alternative energy is changing the way people look at things." It worked on Lefteris Padavos, 51, a Los Angeles photographer who put solar panels on his roof about six months ago. And because he installed the system himself, he paid just $3,000 out of pocket after government incentives.

#### Sustained high oil prices incentivize private investment into alternative energy –becomes cheapest option at $80 a barrel

International Business Times 11 [International Business Times: Why lower Saudi oil prices kill alternative energy, <http://www.ibtimes.com/articles/154524/20110530/saudi-arabia-oil.htm> // Accessed: July 2nd 2012 // BP]

The biggest obstacle to alternative energy is money. Saudi Prince Al-Waleed bin Talal seems to understand this. In a CNN interview, he admitted Saudi Arabia wants lower oil prices because it doesn’t “want the West to go and find alternatives.” Alternative energy hasn’t taken off in the US because its development largely depends on the private sector. Currently, it’s simply cheaper buy oil from countries like Saudi Arabia, so not many private companies bother to develop alternative sources. For example, if Saudi oil average $80 per barrel in the long-term, why bother extracting oil from oil sands and oil shale if doing so cost $85 per barrel? Why turn to electric cars if the whole ordeal – the research, electric cars, and electric grid – cost more than filling up convention cars with imported fossil fuel? On the other hand, if oil skyrockets to $200 per barrel, it would make absolutely sense to develop oil sands, oil shale, and electric cars. Experts generally put the threshold at which alternative energy becomes viable at a long-term sustained price of $80 per barrel. A recent Federal Reserve research, for example, puts the figure for oil sands at $70 per barrel in 2005 terms, which translates to $77.5 in 2010. According to Al-Waleed, Saudi Arabia probably estimates the threshold to be $80 per barrel. The cost of many alternative energy sources is front-loaded. For example, once a solar farm is constructed and the electric grid is built, the cost of harvesting additional electricity becomes extremely cheap. The danger for oil producers like Saudi Arabia is that once a sustained period of high oil prices induces the Western private sector to invest the upfront costs of setting up alternative sources, the price of energy will be lowered permanently. The optimal strategy for Saudi Arabia, therefore, is to avoid a sustained period of high oil prices. For Western countries, the optimal strategy to bite the bullet, pay the upfront cost, and save money in the long-run with cheap alternative energy sources. Western capitalism, however, can be short-sighted and decentralized; if oil prices stay reasonablely low, not enough players in the private sector will have the resolve to eat the enormous upfront costs of developing alternative energy sources.

#### High oil prices lead to alternative energy investment –EIA, DOD and FedEx investment prove

EESI 12 [Environmental and Energy Study Institute: Rising Oil Prices Pushing Large Consumers to Shift to Alternative Fuels, <http://www.eesi.org/rising-oil-prices-pushing-large-consumers-shift-alternative-fuels-06-apr-2012> // Accessed: July 2nd 2012 // BP]

With no relief from high oil prices in sight, large institutional transportation fuel consumers are shifting to alternatives. From the Department of Defense, to the airline industry, to Fed Ex, the security of fuel supplies and price stability are key to accomplishing their missions in the future. The U.S. Energy Information Administration (EIA) reported this week that spot crude oil prices are at a 12-month high. Prices have been driven up in recent months by surging global demand and mounting concerns for the future security of a significant portion of the global oil supply chain which is transported through the Persian Gulf. The Senate Committee on Energy and Natural Resources received testimony on the factors driving the increase in transportation fuel prices on March 29. Find the testimony and video of the hearing here. The Department of Defense (DOD) is the largest institutional consumer of transportation fuel in the United States, accounting for almost two percent of U.S. petroleum demand. Every $1 per barrel increase in the cost of petroleum costs the Navy, alone, $30 million additional per year. The DOD has identified reducing oil dependence to be a strategic necessity. Converting to biofuels is a core part of this strategy. The Biomass Coordinating Council (ACORE) held a webinar exploring these issues on April 4. Speakers included representatives from the Carbon War Room, the U.S. Department of the Navy, Sturman Industries, and Honeywell UOP. The presentations are available here. The airline industry is driven by similar concerns, as described in our SBFF post February 10. Finally, on April 2, NPR reported that Fed Ex is increasingly taking steps to shift its air and ground fleets to alternative biofuels, battery power, and compressed or liquid natural gas. Today, Fed Ex consumes about 1.6 billion gallons per year of transportation fuels.

### Exts – Renewables Turn

#### High oil prices cause a natural shift to other sources of energy

Rivlin 11

[Paul, Senior Research Fellow at the Moshe Dayan Center “High Oil Prices and the Middle East Strategic Balance” 3-16-11, http://www.pdfpedia.com/download/134/high-oil-prices-and-the-middle-east-strategic-balance-pdf.html, javi]

Does it make sense for the US and other Western countries to reduce oil consumption? High oil prices will do this automatically if they are maintained, because they will encourage the use of alternative fuels and technologies that use less fuel. Stimulating this by government action would reduce exposure to oil price rises/shortages and would encourage the development of new technologies. These could help to stimulate economic growth and be exported to China and other fast growing, oil importing countries. They would also have beneficial environmental effects. It is too late to avoid the effects of the current predictable and predicted crisis; any measures undertaken now would only affect the demand for oil in the medium term.

#### Higher oil prices increase green industry businesses investment –companies like First Solar, Nordic Windpower and Altergy Freedom Power prove

Investopedia 11[Investopedia: 6 Industries Hoping That Oil Prices Go Higher, <http://www.investopedia.com/financial-edge/0411/6-Industries-Hoping-That-Oil-Prices-Go-Higher.aspx#axzz1znVSqngN> // Accessed: July 5th 2012 // BP]

Companies that provide goods that are substitutes for oil do very well when oil prices are high. As customers become dissatisfied with the price of oil, they often turn to coals, biofuels, natural gas and ethanol products for their energy needs. Peabody (NYSE:BTU) and Cloud Peak (NYSE:CLD) are two coal companies that often do well when oil prices increase. Companies that provide green energy services are also likely to increase in value as the profitability of wind farms, hydrogen production facilities, and solar and fuel cells rises along with the price of oil. First Solar (Nasdaq:FSLR), Nordic WindPower, and Altergy Freedom Power are good examples of such green energy companies. Lastly, chemical companies that produce chemicals to be used in biofuels and other green technology will also benefit. For example, as demand for biofuels increases, companies that produce fertilizer, insecticides, and lithium can see increases in their quarterly sales. Vizien is a company that produces green chemicals and tends to do well when the price of oil increases.

#### **High oil prices incentivize private industries to invest in alternative fuels –Asian and G7 countries recent investment prove**

Nichols 12 [Will Nichols, Business Green (.com): Report: High oil prices forcing firms to weigh green car options, <http://www.businessgreen.com/bg/news/2175947/report-oil-prices-forcing-firms-weigh-green-car-options> // Accessed: July 5th 2012 // BP]

Oil prices that have stubbornly remained above $100 a barrel have prompted around a quarter of businesses to look at alternative fuel vehicles as a way of cutting costs, new research has revealed. Asian and G7 countries are leading the charge, where respectively 31 per cent and 28 per cent of companies have examined the possibilities presented by greener fleets, such as cars powered by electricity, biofuels, or liquefied natural gas. Road pricing may have to accelerate as green cars hit fuel tax revenues First national pay-as-you-go EV charging network goes liveThat is the conclusion of a major survey of 3,000 executives conducted by business advisers Grant Thornton and released last week, which also revealed that high oil prices are the primary driver behind growing corporate interest in green fleets. Just under 70 per cent of respondents named a high oil price as the main reason for exploring alternative fuel options, while 62 per cent cited general cost management and 55 per cent highlighted tax breaks as also informing their decision. However, businesses are also increasingly aware of the environmental impact of their fleets – 58 per cent listed saving the planet as a driver behind the adoption of alternative-fuel vehicles. Those who had not considered green fleet options named high upfront costs as the main reason for not doing so, followed by the difficulty of charging or refuelling electric, hydrogen, or natural gas vehicles. Electric and hybrid cars are widely considered to save money over the long term by reducing the cost of refuelling, but their uptake to date has been slow, partly due to the high upfront cost and the absence of recharging infrastucture. Daniel Taylor, partner and head of automotive at Grant Thornton UK, said to capitalise on the shift towards greener fleets, car makers had to produce low carbon vehicles that can compete in terms of performance and most importantly price, while offering cost savings in terms of refuelling. "Many dynamic businesses are... looking to determine whether switching their fleets to alternative fuels could offer cost savings, allowing them to free up resources which could be better employed in efforts to expand their operations," he said. "And of course, switching to ‘greener' fuels also boosts their environmental credentials. "Given the high cost of alternative fuel vehicles at present, incentives will be a key driver of more widespread adoption. However, increased production of alternative fuel vehicles should lower costs, increase awareness, and spur businesses to consider them when opportunities arise to expand or replace their fleets."

#### Increasing oil prices incentivize private industries to invest in alternative materials –Ford proves

Ford 12 [media.ford.com: Higher Oil Costs Could Speed Up the Use of New ‘Green’ Materials Such as Old U.S. Paper Money in Future Fords, <http://media.ford.com/article_display.cfm?article_id=36349> // Accessed: July 5th 2012 // BP]

The price of petroleum – used to manufacture plastics – is rising, making a stronger business case for finding new sustainable materials for Ford cars and trucks

Potential alternatives to petroleum-based products, including old U.S. paper currency retired from service and shredded, could join soybeans, denim, plastic bottles and other materials used in Ford vehicles A prime example is soybean-based foam material, used in seat cushions, backs and head restraints, which saves Ford an estimated 5 million pounds of petroleum annually DEARBORN, Mich., April 17, 2012 – Rising oil prices have Ford upping the ante in its push to reduce petroleum dependence and use more sustainable materials – including retired U.S. paper currency – to make parts. A wide range of alternatives to products now made with petroleum are under review for potential application in Ford vehicles – from shredded retired currency to cellulose from trees, Indian grass, sugar cane, dandelions, corn and coconuts. “Ford has a long history of developing green technologies because it’s the right thing to do from an environmental perspective,” said John Viera, Ford’s global director of Sustainability and Vehicle Environmental matters. “Now, finding alternative sources for materials is becoming imperative as petroleum prices continue to rise and traditional, less sustainable materials become more expensive. “The potential to reuse some of the country’s paper currency once it has been taken out of circulation is a great example of the kind of research we are doing,” Viera added. In the early 2000s, when Ford started heavily researching sustainable materials, petroleum was readily available and relatively cheap; a barrel of oil was $16.65. Earlier this year, a barrel hit a high of $109.77. Adding to the appeal of the new potential resources is that they are so plentiful. For example, 8,000 to 10,000 pounds of retired paper currency are shredded daily – more than 3.6 million pounds annually. The shredded money is either compressed into bricks and landfilled, or burned. New sustainable materials that can meet Ford’s stringent requirements and testing could join a growing list of alternatives to petroleum-based materials already in use. Ford’s use of soybean-based cushions in all of its North American vehicles including the all-new Fusion, for example, saves approximately 5 million pounds of petroleum annually. The all-new Escape has door bolsters partially made of kenaf – a tropical plant in the cotton family – offsetting the use of 300,000 pounds of oil-based resin per year in North America. It’s just a start.

#### **High oil prices lead to increased interest in alternative energy –Jefferies Clean Tech conference proves**

Gelsi 12 [Steve Gelsi, The Wall Street Journal: Market Watch: Investors eye renewable energy as oil prices rise, <http://articles.marketwatch.com/2012-02-27/industries/31103173_1_cellulosic-poet-llc-ethanol> // Accessed: July 3rd 2012 // BP]

NEW YORK (MarketWatch) — Biofuel, electric cars and natural gas-powered vehicles drew attention against a backdrop of sharply higher petroleum prices from investors gathered at the Jefferies Global Clean Technology Conference. With crude oil topping $108 a barrel and average retail gasoline costing nearly $4 a gallon at the pump, analysts and clean technology company executives said renewable fuel is becoming more cost-competitive. “Once people start feeling [energy costs] in the pocketbook, that’s when people really start looking at alternatives again,” Jefferies analyst Elaine Kwei said in an interview with MarketWatch. “It has to make economic sense for people. When things start getting expensive, you look for cheaper alternatives.” Kwei said she’s been seeing investor interest around electric cars and other alternatives to petroleum; also around companies that improve energy efficiency. Companies drawing a buzz at the conference include Cree Inc. (US:CREE), a player in energy-saving light-emitting diodes, and Tesla Motors (US:TSLA), which is ramping up production of its battery-powered Model S car. “Electric vehicles are a very hot area, along with [the use of] natural gas for commercial trucks and long distance hauling,” Kwei said. “There’s great interest in converting some of those fleets out there…to natural gas.”

### Exts – Renewables Solve Warming

#### **Renewable energy will help climate change –improves energy efficiency**

The Hindustan Times 11 [The Hindustan Times (New Delhi): Renewable energy technologies can address climate change, <http://search.proquest.com.proxy.lib.umich.edu/docview/906524339> // Accessed: July 10th 2012 // BP]

New Delhi, Nov. 29 -- Renewable energy technologies (RETs) can help address the challenges of international energy poverty and climate change, a study by a UN agency said."RETs can complement conventional energy sources in developing countries to ensure that the lack of electricity -- which is a major bottleneck to industrial development -- can be overcome," said the Technology and Innovation Report 2011 of the United Nations Conference on Trade and Development (UNCTAD), released Tuesday. "Not only could RETs potentially help reduce energy poverty, they could also reduce social inequalities through the creation of new jobs in their application," it added. As per estimates from the International Energy Agency (IEA), over 20 percent of the global population (approx 1.4 billion people) had no access to electricity in 2010. While South Asia had the largest proportion of people without access to electricity, accounting for 42 percent of the world's total, sub-Saharan Africa remained the most underserved region, with 69.5 per cent of the region's population having no access to electricity at all, and only 14 percent of the rural population having access. The report proposed that developing countries should promote rapid development and deployment of RETs so that it leads to large energy savings through improved energy efficiency. The report also said that out of the 1.4 billion people who are not connected to electricity grids globally, approximately 85 percent live in rural areas, where RETs can be an important means of energy supply through semi-grid and non-grid solutions. The supply of energy by RETs, globally, has risen rapidly over the past decade, especially since 2003, when hydrocarbon prices began surging. In 2009, developing countries accounted for about half of all electric power-generating capacity using RETs. The report also said that developing countries need greater know-how and absorptive capacity to make use of such technologies. "This calls for coordinated policy support at the national, regional and international levels. Technological absorptive capacity is also important to facilitate the private sector's greater involvement in the development of RETs." The report also argues that governments in developing countries have a pivotal role to play in combining conventional sources of energy with renewable energy technologies. It says that expanding the use of renewable energy technologies is critical to fostering technological improvements that will bring down their usage costs. It has also recommended measures by which government agencies and the policy framework can play a decisive role which includes promoting the general innovation environment for the development of science, technology and innovation, making renewable energy technologies viable and enabling enterprise development in and through renewable energy technologies.

#### **Transition to alternative energy use key to solve warming –must reduce carbon emissions**

Science Daily 09 [Science Daily: Is Global Warming Unstoppable?, <http://www.sciencedaily.com/releases/2009/11/091123083704.htm> // Accessed: July 20th 2012 // BP]

"Making civilization more energy efficient simply allows it to grow faster and consume more energy," says Garrett.

He says the idea that resource conservation accelerates resource consumption -- known as Jevons paradox -- was proposed in the 1865 book "The Coal Question" by William Stanley Jevons, who noted that coal prices fell and coal consumption soared after improvements in steam engine efficiency.

So is Garrett arguing that conserving energy doesn't matter? "I'm just saying it's not really possible to conserve energy in a meaningful way because the current rate of energy consumption is determined by the unchangeable past of economic production. … If it feels good to conserve energy, that is fine, but there shouldn't be any pretense that it will make a difference. Yet, Garrett says his findings contradict his own previously held beliefs about conservation, and he continues to ride a bike or bus to work, line dry family clothing and use a push lawnmower.Garrett says often-discussed strategies for slowing carbon dioxide emissions and global warming include mention increased energy efficiency, reduced population growth and a switch to power sources that don't emit carbon dioxide, including nuclear, wind and solar energy and underground storage of carbon dioxide from fossil fuel burning. Another strategy is rarely mentioned: a decreased standard of living, which would occur if energy supplies ran short and the economy collapsed, he adds. "Fundamentally, I believe the system is deterministic," says Garrett. "Changes in population and standard of living are only a function of the current energy efficiency. That leaves only switching to a non-carbon-dioxide-emitting power source as an available option." "The problem is that, in order to stabilize emissions, not even reduce them, we have to switch to non-carbonized energy sources at a rate about 2.1 percent per year. That comes out to almost one new nuclear power plant per day." "If society invests sufficient resources into alternative and new, non-carbon energy supplies, then perhaps it can continue growing without increasing global warming," Garrett says. Does Garrett fear global warming deniers will use his work to justify inaction? "No," he says. "Ultimately, it's not clear that policy decisions have the capacity to change the future course of civilization."

#### **Renewable energy will be decisive in solving climate change –IPCC report proves**

Eckstein 11 [Anne Eckstein, staffwriter for Europolitics: IPCC makes plea for renewable energy, <http://www.europolitics.info/sectorial-policies/ipcc-makes-plea-for-renewable-energy-art303656-15.html> // Accessed: July 10th 2012 // BP]

Renewable energy sources, which could provide up to 80% of global consumption by 2050 in the most optimistic scenario, will be decisive in combating climate change, according to a new report adopted on 9 May by the UN group of climate change experts (IPCC). “However, the policies implemented will count more than the availability of such sources of energy,” warns the IPCC. This report is “very important for the way energy will be developed globally in the coming years,” commented IPCC Chair Rajendra Pachauri at a press conference in Abu Dhabi, where the ‘Approved summary for policy makers’, a light version of the report (1), had just been adopted. The full report (nearly 1,000 pages), adopted by the representatives of 194 governments, is being applauded by environmental organisations, but “there is a missing piece,” notes WWF. The NGO regrets the report’s failure to endorse a “100% renewable energy pathway” for 2050, adding that what is missing is “a bold vision with a clear timeline”. “No comment at this stage,” declared the European Commission spokesman. Of the 164 scenarios reviewed, the most optimistic advances that renewable energy (biomass, solar, geothermal, hydraulic, marine and wind energy) “will cover at least 77% of global energy needs by 2050”. The most pessimistic scenario sets the renewable energy figure at only 15% of needs in 2050, in terms of the policies implemented or not. All the scenarios nevertheless project a real escalation of renewable sources. “Most of the scenarios analysed project that, by 2050, the contribution of renewable energy to low-carbon energy supply will be greater than that of nuclear energy or fossil fuels that use carbon capture and storage,” states the text. Renewable energy sources are progressing but accounted for less than 13% of global energy supply in 2010, compared with 85% for fossil fuels (coal, oil and gas), which emit a large share of the greenhouse gases responsible for climate change, and 2% for nuclear. “All options advanced to reduce greenhouse gas emissions show that renewables will play a key role,” commented Professor Ottmar Edenhofer, co-chair of the IPCC working party. However, “it is less a question of availability of resources than of public policies that will determine the development of renewable energy in the coming decades,” according to Ramon Pichs, another working party co-chair.

### Obesity Turn

#### **High oil prices will decrease obesity –empirical data proves**

Courtemanche 10 [Charles Courtemanche: A SILVER LINING? THE CONNECTION BETWEEN GASOLINE PRICES AND OBESITY, <http://onlinelibrary.wiley.com.proxy.lib.umich.edu/doi/10.1111/j.1465-7295.2009.00266.x/full> // Accessed: July 3rd 2012 // BP]

In this paper, I use individual-level data from the 1984–2004 waves of the BRFSS matched with state-level gasoline price and tax data to provide evidence of a causal negative relationship between gasoline prices and body weight. I estimate that 8% of the rise in obesity in the United States over the period 1979–2004 can be attributed to falling gas prices during that time. Assuming that the gas price effect is symmetric, my estimates imply that a $1 increase in gas prices would, after 7 yr, reduce U.S. overweight and obesity by approximately 7% and 10%. The reduction in obesity would save approximately 11,000 lives and $11 billion per year, a magnitude which offsets 10% of fuel consumers' additional expenses. Finally, I find that a rise in gas prices increases walking and decreases the amount people eat out at restaurants, explaining their effect on weight. The results of this paper support the argument of Lakdawalla, Philipson, and Bhattacharya (2005) that the growth in obesity can be explained largely by responses to changing economic incentives. Such a view would suggest that people are rationally “choosing” a weight that maximizes utility, and that policies designed to alter this choice would hurt welfare. However, there are a number of reasons to suspect that market failures cause personal choices to lead to an obesity rate that is higher than the social optimum. First, the fact that in the U.S. insurance system people rarely pay for their own health care costs means that medical expenditures create a negative externality (Bhattacharya and Sood 2005). Second, eating may be addictive to some degree, in which case government intervention could improve social welfare (Cawley 1999). Third, studies have found that listing nutritional information on restaurant menus alters food choices (Albright et al. 1990). The fact that decisions change in response to new information suggests that imperfect information may be creating inefficiencies in the weight market.For these reasons, it is possible that revenue-neutral policies designed to alter gas price in such a way as to induce healthier eating and exercise decisions may improve social welfare. An example would be increasing gasoline taxes while subsidizing mass transit or reducing payroll taxes. However, given the recent sharp increases in gas prices, such a policy proposal is unlikely to be politically viable. An alternative would be to alter federal tax rates in such a way as to establish a gas price floor. I leave an analysis of the welfare effects of such policies to future research. My analysis suffers from several caveats. First, my exercise, restaurant, and food consumption variables are flawed for the reasons discussed in Section III. Future work should use superior data to study the mechanisms through which gas prices affect weight. Second, the fact that my restaurant variable comes from a different data set than my exercise and food variables, plus my lack of additional instruments, prevents me from estimating a structural model to determine more precisely the contribution of the different mechanisms to the gas price effect. Next, further analysis is necessary to determine exactly what percentage of the impact of gas prices on eating at restaurants is because of the income effect as opposed to the substitution effect. Also, further research is necessary to understand the relationship between gas prices and food prices and the resulting impact on health. Finally, my results hold only for as long as no widespread fuel substitutes exist for gasoline.While much is therefore left to learn about the topic, my results suggest that there may be a “silver lining” to the large spike in gasoline prices that has occurred in recent years in the United States: we may experience a modest reduction in obesity, or at least a slowdown in its growth.

# Oil Shocks

## Defense

### Wont Happen

#### Oil shocks unlikely

McKillop –Specialist in Energy Policy, Director of Information of the OAPEC Technology Transfer Subsidiary, AREC and Researcher for UN Agencies Focusing on Energy, Economic and Finance Domains- 12 (Andrew, June 13th, 2012, “Why We need Expensive Oil,” http://www.marketoracle.co.uk/Article35124.html)//HL

WHAT HAPPENS IF OIL PRICES FALL TOO FAR? The model for this is what is happening to the US energy sector because of the shale gas surge: near bankruptcy for the most exposed players like Chesapeake, and falling earnings for the biggest of all US energy coporations, Exxon Mobil, is the result. US gas prices are now suicidally low, but for a host of reasons including US energy players morphing into real estate gamblers, using drilling lease land as betting chips, the surge in US gas production will continue, now with the hope of large volume LNG exports at Asian or European prices (up to 6 times the US price of less than $3 per million BTU). To be sure, LNG export offer from a constantly mounting number of other new producers including Australia and potential new producers in a swath of countries, from Mozambique to Cyprus and Guyana, will surely trim these prices. The IEA's present forecast is for global gas prices to fall 30% by 2020. In no way ironically, global energy corporations both in the OECD and Emerging economies now need high oil prices - defined as about $75 per barrel - to offset the huge costs of developing the huge finds of "stranded" gas that continue to be made, and to maintain their oil production, at constantly rising investment costs per barrel-day of replacement capacity. Spending elasticity on oil E&P (exploration and production) by global energy companies through 2000-2012 to date is relatively predictable and logical: the most recent peak year was 2008, before falling about 33% in 2009, staying flay in 2010, and making an uncertain recovery since mid-2011. Oil prices hit a peak of $147 a barrel in 2008 before falling to $35 a barrel in 2009. Gas E&P was unrelated to this price-elastic profile, again for a host of reasons, including the sheer size of new gas discoveries, and despite the crash of gas prices in the US. Another oil price crash will almost certainly cause another oil E&P spending crash, with the inevitable result that global oil supply will only show the slightest growth of net production capacity - and perhaps even a decline. But as already noted, global oil demand growth is now very close to zero and can dip into contraction not only through recession - but through the surge in non-oil energy supply and the rapid progress in energy saving and efficiency raising technology development and application, both in the OECD and Emerging economies. Separating which of these factors is the driver - declining supply or declining demand for oil - is a chicken and egg question. A GREASY SLOPE FOR OIL PRODUCERS The recent and ongoing determination of Saudi oil minister al-Naimi to "steer" prices down to about $75 for Brent, and only slightly less for WTI, signals the above arguments have been received 20/20 with this readout for producers: prices have to be brought down and held down - to prevent the retreat from oil by world energy users and consumers becoming a rout. Russia's stance on the oil price issue can be gleaned from Gazprom's Medevedev "airing the idea" that oil indexing should be dumped for global gas pricing, and gas pricing might in future be related to renewable energy prices. The crux of the energy pricing issue is easy to summarize. Currently, prices are unrealistically wide ranging and unrelated - they will converge, not diverge further. Oil, for a short while longer still fetches $85 a barrel for WTI and near $100 for Brent, gas prices range from under $17 per barrel equivalent (boe) in the US, more than $85 per boe in Asia and close to that price in Europe, coal prices are around $30 per boe but declining, and renewable energy prices are set in the most extreme possible range from levels as low as $10 per boe to over $200 per boe. Anybody outside the energy industry and energy analyst community looking at these prices can only scratch their head - but the future is mapped. Prices are set to converge, and oil prices have to fall. The biggest drivers of change are the energy demand side and gas-plus-renewables on the supply side. Both are in rapid change, even mutation and for renewable energy the German concept of "Energiewende" or energy transformation is the keyword. The old time model of periodic oil panics driven by fast-growing oil demand in lockstep with fast economic growth, and occasional oil-politics crises and supply cutoffs, is disappearing from view. Global interest in and commitment to the new keywords clean energy and energy saving are of course heavily infiltrated by hype of the global warming crisis type, but the process of energy change is under way. The simplest changes in critical oil using sectors - starting with gas energy in transport - can now accelerate this process, and literally transform world energy. Taking road and marine transport, currently using an estimated 11 to 13 billion barrels-per-year (on a world total of 32 bn bbl/year), as much as 25%-33% of this could be eliminated by the 2020-2025 horizon, given the right policies, financing and commitment. The technology and infrastructure barriers are low or very low. Unappreciated by nearly all commentators, the oil producers can only accelerate this process. If they act to maintain high prices (defined as over $75 a barrel) through production cuts and quotas this will intensify the competitiveness of energy alternatives and energy saving; if they heavily cut back on oil E&P spending this will reduce the rate of supply capacity replacement, oil supply will stagnate or fall faster than global demand, and prices will rise through the $75 ceiling. Either way, the producers accelerate the oil decline and wipeout process. This iron logic will drive the oil-versus-other energy changeover and transition process, with sure and certain outrider signals that the logic is finally understood. These signals already exist in growing numbers. For the past decade but accelerating since 2005, the former "oil majors", sometimes called "supermajors" and variably defined by membership (BP, Chevron Corporation, ExxonMobil, Royal Dutch Shell, Total, ENI, ConocoPhillips) have all made a gas shift shown by the simplest possible indicator: the ratio of their oil energy output to gas energy output on an annual basis. Most are now at or close to 50-50 while some like Shell now produces more than 55% of its annual energy output as gas, not oil. This process is certain to continue, at the same time as the "supermajors" and the large, growing national oil corporations in Emerging economy countries also move into coal, renewable energy, electric power production and downstream value added activities - including energy saving and substitution technology and services. NO MORE OIL CRISIS? This is hard to answer, but the betting is no. The current OECD-source economic recession is itself a major driver of stagnant or falling energy demand and the move away from oil, firstly through economic decline and deindustrialization, which have a major impact on oil prices. Stock exchange crises are not the friends of long term, big ticket investing in high priced oil, and asset collapses will hit oil like any other speculative commodity. When oil falls to prices of $50 or $60, the claim that we face Oil Armageddon becomes even harder to take seriously: only high oil prices can feed panic-theory. Given that natural gas prices, outside the US will fall, coal prices are set to at best stagnate or decline, and renewable energy prices are in some cases on a steep downward slope - while global energy demand is set to grow at slower and slower rates - the potential for oil shock is low. Another oil panic is of low credibility, outside purely political driven oil crisis in the Middle East or possibly Africa. The real crisis, for oil producers is noted above. They are set in a pincer where replacing oil production capacity lost through depletion is high cost and needs prices near $75 a barrel, but prices will rise if they take avoiding action in the shape of production limitation, and will rise if they let total oil supply fall away too fast, that is faster than global oil demand shrinks. The ex-oil majors, rapidly becoming Gas Majors have already made a de facto choice to move away from and out of oil, despite the windfall profits when prices spike, which sets the betting to the second scenario, above, of global oil supply falling away too fast and resulting in a Peak Oil nexus of too little supply and too much demand, which the IEA sets as a major threat and likely by 2017, but this is completely dependent on the demand side holding up. What we can be sure of is that trends continued of the past are most surely and certainly not the future trends - meaning that old style oil shocks now include the surprising rate of decline in global dependence on oil and the surprising trend for oil prices going forward.

### Inevitable

#### Oil prices inevitably shock every four years

Warner 12 – Business and Economics Writer for The Daily Telgraph –(Jeremy, January 5th, 2012, “Oil prices still have the capacity to shock;
Could it be that 2012 won't turn out to be such a disastrous year after all?” LexisNexis)//HL

Perhaps it is no more than coincidence, but ominously the oil price also correlates quite strongly with the US electoral cycle. All of the last three presidential elections have been preceded by sharp oil price spikes followed closely by recession. The other big negative going into 2012 is that inventories are at very low levels, limiting the ability of governments to counter disruptions in supply by drawing down on stocks. The idea that gas fracking has made the US energy self sufficient is for now something of a myth. It's a promise, not yet a present reality. The upshot is that we are at a possibly defining confluence of countervailing pulls on the oil price that may determine wider economic developments for some time to come. Low stocks make the line between over and under supply in the market particularly hard to read. Excessive weakness in the European economy would undoubtedly depress prices quite significantly, but by the same token, stronger-than-anticipated growth in the US would certainly underpin them at present levels regardless, and in combination with any significant threat to supply, cause prices to sky rocket anew. Paradoxically, this might induce another recession and the same "Grand Old Duke of York" pattern in the oil price we have seen played out countless times before. Having been marched up to the top of the hill, the price would then be marched all the way back down again.

### a/t: Econ Impact

#### No impact to oil shocks- reserves solve

Maugeri - P.hD, Senior Executive Vice President (Director) of Strategies and Development at ENI SPA,- 6 (Leonardo, “Two Cheers for Expensive Oil” Foreign Affairs March/April, http://www.foreignaffairs.com/articles/61517/leonardo-maugeri/two-cheers-for-expensive-oil)//HL

Despite all the predictions of impending catastrophic shortages, the world still possesses immense oil reserves. "Proven" reserves alone, more than 1.1 trillion barrels, could fuel the world economy for 38 years even at current rates of consumption. And this figure understates potential production, because the accepted definition of proven reserves includes only those reserves that can be exploited with currently available technology at conservatively projected prices. An additional 2 trillion barrels of "recoverable" reserves are not classified as proven but will probably meet that standard in a few years as technological improvements, increased knowledge of the subsoil, and the economic incentive created by higher oil prices (or lower extraction costs) come into play. Consider, for example, that only 35 percent of the oil contained in known oil fields worldwide can be recovered today with existing technologies and based on current economic fundamentals (up from 22 percent in 1980). Current estimates of recoverable supplies also ignore large deposits of so-called unconventional oil, such as ultraheavy Venezuelan oil and oil that can be extracted from Canadian tar sands. Moreover, huge areas of the planet have yet to be thoroughly explored. In other words, what little is known about the world s underground oil resources justifies a positive view of the future, not the alarmist vision of oil catastrophists. The pessimists assume that the world has been fully explored, that neither the dynamic of crude prices nor technological progress has any bearing on the "finite" nature of oil resources, and that consumption is bound to increase more and more, inexorably depleting the existing oil stock. Their pseudoscicntific fatalism, camouflaged with quasi-sophisticated models, has turned out to be wrong repeatedly in the past, and it is unlikely to be right in the future.

**Oil shocks do not does not cause economic decline or inflation- empirically proven**

Mignon 08 - a scientific advisor at CEPII. She is co-editor of the journal International Economics, PhD in Economics (Valerie, April 5th, 2008, “On the Influence of Oil Prices on Economic Activity and Other Macroeconomic and Financial Variables,” http://www.cepii.fr/anglaisgraph/workpap/pdf/2008/wp2008-05.pdf)

Since the late 1990s, the global economy has experienced two major oil shocks. While being of a sign and magnitude comparable to those of the 1970s, GDP growth and inflation have remained quite stable in the majority of industrialized countries. According to Blanchard and Gali (2007), a plausible explanation is that the effects of an oil price increase are similar across periods, but have coincided in time with large shocks of a very different nature: large increases in other commodity prices in the 1970s, and high growth of productivity and world demand for oil in the 2000s.

**Oil price spikes have no impact on the American economy**

**Davidson 12** –Economics Writer for NPR-(Adam, March 27th, 2012, “The Real Oil Shock,” The New York Times, http://www.nytimes.com/2012/04/01/magazine/rising-gas-prices-dont-actually-affect-americans-behavior.html)

High gas prices must be forcing Americans to cut back in other ways, right? That’s what the economists Lutz Kilian at the University of Michigan and Paul Edelstein of the consulting firm IHS Global Insight wondered. They looked at personal spending habits during periods of high energy prices and discovered that “somewhat surprisingly, there is no significant decline in total expenditures on recreation,” which was one place they expected to find frugality. More specifically, rising gas prices had “no significant effect on the consumption of movies, bowling and billiard[s], casino gambling and only insignificant declines for recreational camps, sightseeing, spectator sports and spectator amusements.” Some people bought fewer lottery tickets, they told me. In other words, Americans may protest loudly, but their economic behavior indicates a remarkable indifference to the price of oil. In Europe, where taxes keep gas prices well above $5 a gallon, citizens are more likely to take public transportation and live near the center of town. The streets are filled with mopeds and tiny cars. The United States, on the other hand, barely exerts the minimum effort expected of a gas-phobic society: its enthusiasm for car pooling, enhanced public transportation and fuel-efficient vehicles remains relatively low. The average American even spends more gas money on social and recreational trips (about $13 a week, on average) than on their commutes to and from work (around $8). If gas prices truly damage the quality of our lives, we have done a remarkable job of hiding it.

#### Price of oil depends of hundreds of factors- plan can’t solve them all

**Davidson 12** –Economics Writer for NPR-(Adam, March 27th, 2012, “The Real Oil Shock,” The New York Times, http://www.nytimes.com/2012/04/01/magazine/rising-gas-prices-dont-actually-affect-americans-behavior.html)

Every day, U.S. drivers pay a price determined by forces all over the world that are hard to understand and harder for the United States to control. Even if we invested in better refineries and exploited every possible energy source, from the Keystone pipeline to the Alaskan wilderness, the impact could be minimal. It could eventually lower prices at the pump — but only if nothing else affects them, like OPEC lowering its production to drive prices back up again. The price of oil is, of course, affected by hundreds of interrelated factors. “The folks on the right say: ‘Drill here! Drill, drill, drill!’ But that will not impact the global price of oil,” says Gal Luft, co-director of the Institute for the Analysis of Global Security. “How do I know? Because we had this great experiment for seven years where our dependence on oil declined from 60 percent to 45 percent. We import much less percentage-wise than we did 10 years ago. What happened to the price of oil? It doubled.” And the left, Luft says, isn’t offering any better solution. “When they talk about solar and wind and things like that, it’s like applying Prozac to a cancer patient,” he says. “It has nothing to do with the problem.” Many analysts I’ve spoken with suggest that oil prices should fall fairly soon. This will be welcome news to the less-fortunate American families who are not impervious to the price at the pump and to anyone who claims to be pinching pennies because of gas. But as unpopular as it may sound, the best possible future for most Americans may involve much higher gas prices. As billions of people, throughout the world, enter the middle class in the coming decades, there will be an enormous increase in the demand for gas. This, along with rising environmental considerations, is likely to send the prices far higher than they are today. But at that point, we will all probably be driving solar-powered hovercars anyway.

# Peak Oil

## Defense

### No Peak Oil

#### High oil prices promote market solutions for peak oil – new technology, recycling, and efficiency

**Verbruggen and Al Marchohi, ’10** –\*trained in engineering and applied economics at Louvain, Antwerp and Stanford University; co-founder of research and consultant units;conceived, supervised and edited the State of the Environment Reports in Flanders and was the first president of the Environmental Advisory Council and principal advisor to the Minister of the Environment; contributes to the IPCC Third and Fourth Assessment Reports. \*\* AND attaché at [SERV](http://be.linkedin.com/company/serv?trk=ppro_cprof) government public policy that as an advisory body and think tank for the Flemish government and parliament); PhD researcher at University of Antwerp - PhD study on socio-economic feasibility of sustainable housing in Mediterranean climate. (Aviel and Mohammed, “Views on peakoil and its relation to climate change policy”, Energy Policy Volume 38, Oct. 2010, Science Direct)//AY

Currently used technologies leave about 65% of the oil in the ground ([Hall et al., 2008](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib33)). Oil shortage will make prices rise. Increased prices convert part of the once uneconomic *resources* (e.g. small or deep oilwells remote from markets) to economic *reserves*. The resources are vastly greater than the reserves ([Table 1](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#tbl1)), so enough material is available if prices are sufficiently high. Long before the last fractions of exhaustible resources could be extracted, production costs will rise so high that demand will vanish. High prices also provide economic incentives “*to develop new cost-saving technologies, to design products that use fewer resources, to substitute less costly and more abundant resources, to recycle, and to discover new deposits*” ([Tilton, 1996: p. 94](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib74)). Both, decreasing use and the increased rates of discovery and recovery as a result of higher oil prices, will extend the life cycle of the petroleum reserves ([Craig et al., 2001: p. 173](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib23)).

[Watkins (2006)](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib81) criticizes the definition of URR as a fixed, final or fundamental fact. He shows oil production increased by 30% between 1973 and 2003, with reserves to production ratios rising over the same period from 31 to 40 years (i.e. reserves increased faster than production). [Watkins (2006: p. 512)](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib81) argues that the exact estimate of URR, optimistic or pessimistic, would include the knowledge of future science and technology. URR are thus unknowable. Critics of the peakoil vision emphasize the large quantities of non-conventional oil in tar sands and oil shale ([Table 1](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#tbl1)) ([Hall et al., 2008](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib33)).

Peakoil critics mostly share an optimistic view on discoveries. In 1994, [Odell (1994)](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib65) spreads the view that most regions are under-explored because the global oil industry experiences a lack of maturity compared to the USA industry, retarding the exploration of new reserves compared to quick and intensive exploration in the USA. Also high reserves to production ratios retard exploration. [Maugeri (2006a: p. 1)](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib59) argues that during the last 25 years more than 70% of exploration effort took place in the USA and Canada that probably hold only 3% of the world’s crude oil reserves. The Middle-East region only experienced 3% of global exploration during the same period while holding around 70% of the earth’s crude oil reserves. In the Persian Gulf, less than 100 exploration wells (out of a total of about 2000 wells) were drilled between 1995 and 2004, while 15,700 exploration wells (out of a total of more than one million wells) were drilled in the USA during the same period. Although OPEC countries such as Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates own the largest oil reserves, these countries are still relatively underdeveloped and under-explored ([Maugeri, 2006b: p. 150](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib60)). After the 1970s, most Middle-East countries nationalized their oil industries causing a decline in the regions geological and exploration know-how. Today, Western oil companies only control 8% of the global oil reserves while more than 90% of the world’s reserves are located in countries not allowing foreign access and unwilling or being unable to develop new reserves on their own ([Maugeri, 2006a: p. 1](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib59)). [Maugeri (2006b: p. 152)](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib60) emphasizes most oil producing countries pump from old fields, most being in production since the first half of the 20th century, still using 50–60-year-old technology and equipment. Next to OPEC countries, the capacities of the Russian and Caspian regions are seriously underestimated. Maugeri believes current limited spare production capacity is the result of 20 years inadequate investment in exploration. The price collapse in 1986 made OPEC countries worry about overproduction causing several OPEC countries not to develop new fields and only exploiting those already in production to maintain steady production levels. Low prices in the 1990s, limited growth in demand and another price collapse in 1998–1999 reinforced the principle of minimizing excess capacity. Between 1986 and 2005, global spare oil production capacity dropped from 15% to 2–3% of global demand ([Maugeri, 2006b: pp. 151–154](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib60)). High prices are the result of economic disturbances, not of geological limitations. High prices are a prerequisite for greater investment. ([Maugeri, 2006a: p. 2](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib59)) concludes with: ‘*In other words, there is more than enough oil in the ground*’.

Odell shows that between 1950 and 1989 only once the annual use of oil exceeded the annual addition to reserves by the global oil industry and states: “the world is running into oil, not out of it” ([Odell, 1992: p. 285](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421510003514#bib64)). We updated Odell’s graph, based on BP Statistical Review data for the post-1990 period, and show that Odell’s findings hold for the post-1990 period until 2007 (latest data available). From 1990 onward, the 5 year moving average of gross additions to reserves always exceeded yearly production.

#### No peak oil – new reserves and technological advancements

**Helm, ’11 -** economist specialising in utilities, infrastructure, regulation and the environment, and concentrating on the energy, water, communications and transport sectors primarily in Britain and Europe. He is a professor at the university of Oxford and a fellow of New College, Oxford (Dieter, “Peak oil and energy policy—a critique”, Oxford Review of Economic Policy Volume 27, Winter 2011, http://oxrep.oxfordjournals.org.proxy.lib.umich.edu/content/27/1/68.full.pdf+html)//AY

Contrary to the view of the peak-oilers, new reserves keep on being discovered (Lynch, 2002), with recent new ﬁnds in the Mexican Gulf and off Brazil. Promising ﬁndings off the Falkland Islands and new information from the Amazon basin give the chance of yet more discoveries to be added to the results of greater exploration in Russia. Even in the well developed North Sea, new reserves are being found. The BP disaster in the Gulf of Mexico only temporarily limited offshore development. Onshore, the great success of the last decade has been in Africa, with, in particular, the emergence of Angola as a key supplier to the US and China. Following Hubbert, peak-oilers take the yield from existing ﬁelds as given. It is typically

assumed that a ﬁeld will yield less than 50 per cent of its capacity. This, however, is only true if there is little technical progress and the costs limit extraction. Change these variables, and then the depletion level itself becomes a variable. Put another way, at least half of all the oil extracted in the industry’s history is still in the ground. Of more relevance for reserves is the depletion number—a small increase in the amount of oil extractable may have much more signiﬁcance to total recoverable reserves than

a new big oil-ﬁeld ﬁnd. As with abandoned coalmines, some combination of technology, costs, and price may make more of this recoverable. The importance of this point is that peak oil claims are ultimately economic ones—there is no relevant physical peak. Rather, it is argued that the economics of oil extraction dictates that only some (small) parts of the physical reserves are worth exploiting. Hence the claim that there is a production ceiling is based upon assumptions about costs—and these, in turn, rest on given (current) technologies. In much of the peak oil literature, the scope for technical change in fossil fuel production is downplayed. Yet there is very little basis for this assumption: indeed, more resources have been devoted to fossil fuel technologies than renewables for some considerable time. The development of offshore oil is recent, spurred on by the OPEC price shocks in the 1970s. Much of this is not based on exogenous discoveries, but on investment. Looking ahead, it is to be expected that there will be signiﬁcant results in the new areas of unconventional gas and shale oil, and in offshore E&P. Work on the Shtokman ﬁeld off the northern Norwegian and Russian coasts, deep drilling off Brazil, and managing the conditions in Yamal are together likely to yield signiﬁcant advances. The scale of the challenges faced by BP in the Mexican Gulf has led to a live experiment with frontier technologies. It has been a massive exercise in R&D.

#### Oil peak is exaggerated – new reserves and increasing domestic oil

**Bonner, 6-28**-12 - written two New York Times best-selling books, Financial Reckoning Day and Empire of Debt. With political journalist Lila Rajiva, he wrote his third New York Times best-selling book, Mobs, Messiahs and Markets, which offers concrete advice on how to avoid the public spectacle of modern finance; Since 1999, Bill has been a daily contributor and the driving force behind The Daily Reckoning (Bill, “The Biggest Fraud in Economics is…Economics?”, Christian Science Monitor, 6/28/2012, http://www.csmonitor.com/Business/The-Daily-Reckoning/2012/0628/The-biggest-fraud-in-economics-is-economics)//AY

\*Porter Stansberry:  [American](http://en.wikipedia.org/wiki/United_States) financial publisher and the creator of the 2011 online video and [infomercial](http://en.wikipedia.org/wiki/Infomercial) titled "End of America": founded Stansberry & Associates Investment Research, a private publishing company; currently the editor of [Agora Inc.](http://en.wikipedia.org/wiki/Agora_Inc.)'s financial newsletter

Forget ‘peak oil.’ Or so they say. It has fracked its way to energy self-sufficiency. Porter Stansberry there are roughly 20 major shale oil plays in the [US](http://www.csmonitor.com/tags/topic/United%2BStates). The largest five of these new reservoirs have more than 20 billion barrels of recoverable oil… meaning that each of these new fields is not only the largest in US history (by a wide margin), but that each of them, individually, would more than double the proven reserves of domestic oil…

That is why America is on track to be the world’s leading producer of oil within the next five or six years… and why the most knowledgeable oil analysts are predicting a new all-time high of American oil production by 2017. In fact, we’ve already become a net energy exporter for the first time since 1949.

[*The Wall Street Journal*](http://www.csmonitor.com/tags/topic/The%2BWall%2BStreet%2BJournal) tells us that the US will not import a single barrel of oil from the [Middle East](http://www.csmonitor.com/tags/topic/Middle%2BEast) by 2035.

Hey, wait a minute. Wasn’t that supposed to be why we’re spending trillions on wars in Middle East…to keep vital supplies of black goo headed our way?

Of course, the numbers never really made any sense. Neither did the logic of it. It would have been a whole lot cheaper just to buy the oil on the open market. Trillions cheaper.

But money isn’t everything. The US needs to guarantee access to oil…or its whole economy might be brought to its knees.

Which is probably a good place to introduce a new idea

The biggest fraud in economics is economics itself.

What’s the point of having an economy? It is so that people will get the stuff they need and want. The more efficient the economy, the more stuff people get with the least effort and expense of resources.

It makes no sense to waste trillions of dollars’ worth of resources just to “protect the economy.” The whole point of an economy is to create more stuff…not to waste it. You might just as well try to protect your health by committing suicide.

Most economists are fools or knaves. The knaves want to get prestigious jobs and [Nobel prizes](http://www.csmonitor.com/tags/topic/Nobel%2BPrize) by offering crackpot advice. The fools think it will work.

A few months ago, they were concerned with peaks. There was a peak in oil production. There was a peak in food production. There was a peak in available water coming. Then, a peak in peaks must have been hit.

Now there is a peak in valleys. All of a sudden, the peaks are far away. Commodity prices are falling, not rising. Deflation is economists’ worry, not inflation. Deflation is an impediment to growth; everyone believes it.

#### No impact to oil peak – natural transition to alternatives and substitutes

**Perry, 6-5-**12 - professor of economics and finance in the School of Management at the Flint campus of the University of Michigan; holds two graduate degrees in economics (M.A. and Ph.D.) from George Mason University in Washington, D.C. In addition, he holds an MBA degree in finance from the Curtis L. Carlson School of Management at the University of Minnesota. Since 1997, Professor Perry has been a member of the Board of Scholars for the Mackinac Center for Public Policy, a nonpartisan research and public policy institute in Michigan (Mark, “Julian Simon, Power Of Market Prices, Why We’ll Never Run Out Of Oil, Why Peak Oil Is Peak Idiocy”, Daily Markets, 6/5/12, http://www.dailymarkets.com/economy/2012/06/04/julian-simon-power-of-market-prices-why-well-never-run-out-of-oil-why-peak-oil-is-peak-idiocy/)//AY

As resource economist [Julian Simon](http://en.wikipedia.org/wiki/Julian_Simon) taught us years ago, we never have, and never will, run out of scarce resources like oil because as a resource becomes more scarce, its price will rise, which will set in motion a series of actions that will counteract the scarcity.  For example, higher prices for oil will increase the incentives to: a) find more oil, b) conserve on the use of oil, and c) find more substitutes.  And that’s exactly what’s happened recently in response to higher oil prices – domestic crude oil production reached a 14-year high in March, and the share of rigs drilling for oil (vs. natural gas) set a new record high of 70% last week.

And now an [LA Times article today](http://www.startribune.com/business/157099475.html) highlights how companies are making efforts to find substitutes for high-priced oil, here are some examples:

1. Ford has eliminated 5 million pounds of petroleum annually by using soybean-based cushions in all of its North American vehicles. The company said it got rid of an additional 300,000 pounds of oil-based resins a year by making door bolsters out of kenaf, a tropical plant in the cotton family.

“Finding alternative sources for materials is becoming imperative as petroleum prices continue to rise and traditional, less-sustainable materials become more expensive,” said John Viera, Ford’s global director of sustainability and vehicle environmental matters.

2. BioSolar Inc. of Santa Clarita, Calif., dealt every day with the fact that solar modules are typically made with a glass front, an aluminum frame and a back sheet made out of a petroleum-based plastic or polymer.

“We saw where the price of petroleum was going,” BioSolar CEO David Lee said. “We’re not economists, but we knew that the price of oil was going to keep going up. The cost of photovoltaic cell manufacturing was going to skyrocket.” BioSolar has changed its process to instead use castor beans.

3. Los Angeles businessman Neal Harris once relied on beads made from a petroleum-based polymer to hold fragrances for his company’s products. Harris’ company, Scent-Events, sells fragrances as a marketing tool to enhance movie premieres, concerts, parties and products. This year, he’ll use ceramic beads 95 percent of the time. “It’s saving us money, and we no longer have to keep track of oil prices,” Harris said.

4. In March, McDonald’s began a tryout of double-walled paper hot-drink cups in 2,000 restaurants, in place of polystyrene containers, which start out as petroleum.

5. Coca-Cola Co. and PepsiCo Inc. are becoming bioplastics bottlers.

As Daniel Yergin, an energy consultant who wrote a Pulitzer Prize-winning history of the oil industry, told the LA Times, “Now there are accelerating efforts to squeeze oil out and find ways to substitute for it. That is the power of price.”

#### No impact – even if peak oil is true, prices force market corrections and transitions to alternatives

**Rühl, ’10** -  group chief economist; manages BP's global economics team, analyzing the global economy and energy markets; previously, he was at the World Bank where he served as the Bank's chief economist in Russia and Brazil and worked in the Office of the Chief Economist at the EBRD. Earlier, he was an academic economist (Christof, “Price Fluctuations are Likely to Increase”, EuroActiv, 1/29/12, <http://www.euractiv.com/de/energie/bp-preisschwankungen-wahrscheinlich-zunehmen/article-175931>)//AY

**Q: But isn't the result the same in terms of economic impact, whether it is peak oil or severely restricted access?**

A: No, the result is not the same. Because this situation will react to prices and other fuels becoming available, and it will react to low prices and to these barriers coming down again.

Physical peak oil, which I have no reason to accept as a valid statement either on theoretical, scientific or ideological grounds, would be insensitive to prices. In fact the whole hypothesis of peak oil – which is that there is a certain amount of oil in the ground, consumed at a certain rate, and then it's finished – does not react to anything.

Whereas we believe that whatever can be turned into oil strongly depends on technology and technology depends on prices as well.

Therefore there will never be a moment when the world runs out of oil because there will always be a price at which the last drop of oil can clear the market. And you can turn anything into oil into if you are willing to pay the financial and environmental price.

It is more likely that demand will peak, which is what we are seeing in Japan and in Europe.

And then of course there is another constraint. The human capacity of digging hydrocarbons out of the ground and burning them and turning them into energy seems to be much larger than the atmospheric capacity to absorb the resulting CO2.

That is likely to be more of a natural limit than all these peak oil theories combined. Peak oil has been predicted for 150 years. It has never happened, and it will stay this way.

#### Hydrocarbon resources and advanced tech solve oil peak

**Maugeri, ’12 –** One of the world’s foremost experts on oil, gas, and energy; one of the most distinguished top managers of [Eni](http://en.wikipedia.org/wiki/Eni) (the giant Italian giant oil&gas, ranked 6th among the largest international oil companies), where he held the positions of Senior Executive Vice President of Strategies and Development for about ten years and eventually Executive Chairman of [Polimeri Europa](http://en.wikipedia.org/wiki/Polimeri_Europa), Eni’s petrochemical branch; well-recognized worldwide for his books and seminal articles about energy, as well as for his part-time activity as a lecturer in some of the most prestigious universities and think-tanks. (Leonardo, “Oil: The Next Revolution THE UNPRECEDENTED UPSURGE OF OIL PRODUCTION CAPACITY AND WHAT IT MEANS FOR THE WORLD”, The Geopolitics of Energy Project, June 2012, [http://belfercenter.ksg.harvard.edu/files/Oil-%20The%20Next%20Revolution.pdf)//AY](http://belfercenter.ksg.harvard.edu/files/Oil-%20The%20Next%20Revolution.pdf%29//AY)

NOT RUNNING OUT OF OIL: HOW HYDROCARBON RESOURCES EVOLVE

In 2011, the world consumed about 32 billion barrels of oil (crude oil and natural gas liquids), while oil proven reserves were about 1.3 trillion barrels. This means that those reserves should last more than 40 years. However, proven reserves are only a tiny slice of the overall supply of oil

our planet hides.

On a global scale, the U.S. Geological Survey (USGS) estimates the remaining conventional oil resources in the earth at about seven trillion to eight trillion barrels, out of eight-to-nine trillion barrels of Original Oil in Place (OOP). Part of this (about one trillion barrels) has already been

consumed by humankind. With today’s technology and prices, only part of the OOP can be recovered economically and thus be classified as a proven reserve.

The notion of recoverability is crucial to the oil industry. Given its complex nature, a hydrocarbon reservoir will always retain part of the oil and gas it holds, even after very long and intensive exploitation. Fields that no longer produce oil and are considered exhausted still contain ample volumes of hydrocarbons that cannot simply be economically recovered with existing

technologies.

Today, the worldwide average recovery rate for oil is less than 35 percent of the estimated OOP, which means that less than 35 barrels out of 100 may be harvested. As often occurs with statistics, these figures hide huge disparities.

In most major producing countries, particularly those where international oil companies (IOC’s) are not permitted to produce oil, the oil recovery rate is well below 25 percent, because of old technologies, reservoir mismanagement, limited investment, and many other factors.

The situation has improved in the last decade, but not significantly. For example, the current leading oil producers report about a 20 percent recovery rate. This group includes the Russian Federation, Iran, Venezuela, Kuwait, and others. Some of these countries have even lower recovery rates, in spite of their long and important history as producers.

Consider Iraq. Despite its long history as a producer, the country is largely untapped as far as oil

development is concerned, according to the assessment made by the IOC’s awarded redevelopment contracts between 2009 and 2011 (see Section 3). Since production began at the dawn of the twentieth century, only 2,300 wells (both for exploration and production) have been drilled there, compared with about one million in Texas.

A large part of the country, the western desert area, is still mainly unexplored. Iraq has never implemented advanced technologies, like 3.

#### Predictions about peak oil are inaccurate and empirically denied

**Wuerthner, ’12** – ecologist, writer and  photographer; written 35 books on conservation issues; researched and written a number of books on mountain ranges; degree in Science Communication from the University of  California, Santa Cruz before taking additional graduate courses in geography at the University of Oregon (George, “The Myth of Peak Oil”, Counter Punch, 3/29/12, [http://www.counterpunch.org/2012/03/29/the-myth-of-peak-oil/)//AY](http://www.counterpunch.org/2012/03/29/the-myth-of-peak-oil/%29//AY)

\*Hubbert = first main person to come up with peak oil theory and graphs

**HUBBERT’S ERROR**

The first problem with Hubbert’s prediction is that his estimates of total oil and gas reserves are far too low. If the starting amount of reserves are low, than the top of the bell curve is reached much sooner than if there are greater amounts of oil–assuming that a bell curve actually represents what is  occurring–which many people dispute. Some suggest Hubbert just drew the curve to fit his assumptions.

In his paper, Hubbert estimated that the “ultimate potential reserve of 150 billion barrels of crude oil for both the land and offshore areas of the United States.”  Hubbert’s estimate was based on the crude oil “initially present which are producible by methods now in use.”  Using the 150 billion barrel estimate he predicted US Peak Oil occurring in 1965. But to be cautious, he also used a slightly higher figure of 200 billion barrels which produced a peak in oil production around 1970—the figure that Hubbert advocates like to use to demonstrate that Hubbert was prophetic in his predictions.  However, by 2006 the Department of Energy estimated that domestic oil resources still in the ground (in-place) total 1,124 billion barrels.  Of this large in-place resource, [400 billon barrels](http://www.fossil.energy.gov/programs/oilgas/publications/eor_co2/Undeveloped_Oil_Document.pdf) is estimated to be technically recoverable with current technology.

This estimate was produced before horizontal drilling and hydraulic fracturing or fracking techniques were widely adopted which most authorities believe will yield considerably more oil than was thought to be recoverable in 2006.

Going back to Hubbert’s paper we find that he predicted that by 1970 the US should have consumed half or about 100 million barrels of oil of the original endowment of 150-200 billion barrels of recoverable oil. And by his own chart on page 32 of his paper if we use the assumption of 200 billion barrels as the total potential oil reserves of the US we should be completely out of oil by now. According to his curve and graph, by year 2000 we should have had only around 27 billion or so barrels of oil left in the US and fallen to zero sometime in the mid-2000s.

Yet the US government estimates as of 2007 that our remaining technically recoverable reserves are 198 billion barrels, and this excludes oil that may be found in area that are off limits to drilling (i.e. like most of the [Continental Shelf)](http://www.eia.gov/totalenergy/data/annual/pdf/sec4_3.pdf).

And there are another 400 billion barrels that some suggest could be recovered with new methods (which itself is a subset of total in place oil which future technology may [make available](http://www.fossil.energy.gov/education/energylessons/oil/MS_Oil_Studyguide_draft1.pdf) at an affordable price).

Obviously if Hubbert were correct, and we had reached Peak Oil in 1970 (point where we had consumed half of our oil) and we started out with only 200 billion, we could not have nearly 200-400 billion still left to extract—and total resources are likely even higher than this figure.

It’s also important to keep in mind that “technologically recoverable” resources are not the “total” amount of oil thought to exist in the US, so the total in-place reserves are much, much larger. It does not take a lot of imagination to predict that many of these oil resources will eventually be unlocked with new technological innovation thus added to the total “proven reserves.”

Another example of his under-estimation of oil is US off-shore oil. In his 1956 paper, Hubbert suggests we had 15 billion total barrels, but the US government now estimates there is closer to 90 billion barrels of oil left off-shore–and we have already extracted quite a bit. (I’m not sure if that figure is just for off -shore currently open to exploration or all off shore–since oil exploration is banned on 83% of the US coastline. If this figure refers only to those areas currently available to drill–then the number may be quite a bit higher if all off shore areas were opened to oil extraction).

Hubbert was even farther off in his estimate for global oil reserves, which is not surprising since in 1956 very few parts of the world had been adequately studied.  In his 1956 paper Hubbert  wrote that there was “about 1250 billion barrels for the ultimate potential reserves of crude oil of the whole world.” In his paper he estimated that the entire Middle East including Egypt had no more than 375 billion barrels of oil. Yet by 2010, the Central Intelligence Agency (CIA) estimated that just the “proven reserves” in Saudi Arabia alone totaled 262.6 billion barrels.  Similarly in his paper Hubbert uses an estimate of 80 billion barrels for all of South America, yet Venezuela h[as 296 billion barrels of proven reserves](https://www.cia.gov/library/publications/the-world-factbook/rankorder/2178rank.htm).

By 2000, the point when Hubbert estimated that we would reach global Peak Oil we would have only around 625 billion barrels of oil left. Just the 558 billion barrels of proven reserves known to exist in Saudi Arabia and Venezuela alone (and a lot more in-place resources) is nearly equal the total global oil supplies that Hubbert estimated would remain in global reserves.  Obviously once again Hubbert’s global estimates were way too low.

The world has already burned through more than a trillion barrels of oil, clearly demonstrating how far off his prediction of oil supplies were. The estimated “[proven reserves](https://www.cia.gov/library/publications/the-world-factbook/rankorder/2178rank.html)” left globally are today more than 1.3 trillion for the top 17 oil producing countries alone.

#### Peak oil statistics are wrong – don’t take into account recovery factors AND higher prices solve for oil shortage

**Wuerthner, ’12** – ecologist, writer and  photographer; written 35 books on conservation issues; researched and written a number of books on mountain ranges; degree in Science Communication from the University of  California, Santa Cruz before taking additional graduate courses in geography at the University of Oregon (George, “The Myth of Peak Oil”, Counter Punch, 3/29/12, [http://www.counterpunch.org/2012/03/29/the-myth-of-peak-oil/)//AY](http://www.counterpunch.org/2012/03/29/the-myth-of-peak-oil/%29//AY)

\*Hubbert = first main person to come up with peak oil theory and graphs

Part of the confusion in the Peak Oil debate is that people, agencies and organizations use different definitions and accounting methods that are often not explicitly acknowledged. For instance, most Peak Oil advocates rely upon “proven reserve” numbers to argue we have limited oil supplies remaining. However, it is important to note the term “proven reserves” has a very precise meaning that only includes oil that has a 90% certainty that the oil can be extracted using current technology at current price. It does not represent total oil that may over time be produced. The total estimated amount of oil in an oil reservoir, including both producible and non-producible oil, is called various terms including oil in place. Due to technological, political and other limitations, only a small percentage of the total “in place” oil can be extracted at the present time.  However, proven reserves are the bare minimum amount of oil that reasonably can be expected to be extracted over time.

One of the wild cards in predicting oil reserves is the recovery factor. Recovery factors vary greatly among oil fields. Most oil fields to this point have only given up a fraction of their [potential oil holdings](http://en.wikipedia.org/wiki/Enhanced_oil_recovery)—between 20-40%.     By 2009 the average Texas oil field had only about a [third of its oil extracted](http://www.beg.utexas.edu/UTopia/images/pagesizemaps/oilgas.pdf), leaving two-thirds still in the ground.     Using Enhanced Oil Recovery (EOR) techniques, many of them not even available when Hubbert wrote his paper, recovery can often be boosted to 40-60%. In essence if EOR were applied to many of the larger US oil fields, we could effectively double the oil extracted, hence “proven reserves.”

Even Hubbert recognized that we may eventually extract more oil from existing fields, though he still underestimated the effect of new discoveries and new technology.   Hubbert wrote ”… only about a third of the oil underground is being recovered. The reserve figures cited are for oil capable of being extracted by present techniques. However, secondary recovery techniques are gradually being improved so that ultimately a somewhat larger but still unknown fraction of the oil underground should be extracted than is now the case. Because of the slowness of the secondary recovery process, however, it appears unlikely that any improvement that can be made within the next 10 or 15 years can have any significant effect upon the date of culmination. Amore probable effect of improved recovery will be to reduce the rate of decline after culmination…..”

While no one realistically believes it’s possible to get every last drop of oil from an oil reservoir, new technologies are often able to get significantly more oil from existing fields than was possible in the past. The important fact is that the recovery factor often changes over time due to changes in technology and economics. Since the bulk of global oil still remains in the ground, and any shift upward in price and improvement in technology suddenly makes it profitable to exploit reserves that were previously not included in the “proven reserves” estimate. Thus proven reserve estimates are a minimum, not the maximum amount of oil available.

To demonstrate how technology and price can affect “proven reserves” estimates, just a few years ago Canada’s “proven reserves” of oil were only 5 billion barrels. Today, due to higher prices and improved technology that makes tar sands production economically feasible; Canada now has “proven” reserves of 175 billion barrels of oil. Nothing changed other than the price of oil and the technology used to extract it. Oil companies knew there was a lot of oil in the tar sands, but it took a change in technology and price to move it into the “proven reserves” category.  Even more telling is that the total minimum estimate of in place oil for the tar sands exceeds 1.3 trillion barrels of oil. Keep in mind that 1.3 trillion barrels is more oil than Hubbert thought existed in the entire world when he presented his 1956 paper.

People knew all along there were tremendous amounts of oil locked in Alberta’s tar sands.  But it took a change in price, along with some technological innovation to make it profitable for extraction. So proven reserves are not a static figure based on geology, rather it reflects economics and technology. Unfortunately too many writing about the presumed Peak of oil in the United States appear to ignore the distinction, and regularly use the “proven reserves” figure as if it were the ultimate geological limit on oil and/or gas supplies.

Although the major point of his paper was the potential depletion of traditional oil and gas reservoirs, he did mention “unconventional oil.” Unconventional oil reserves are oil or hydrocarbons found in geological formations other than a traditional oil reservoir. Examples of unconventional oil include  Alberta’s tar sands, oil shales of the Green River Basin of Colorado, Utah, and Wyoming, the heavy oils of Venezuela,  and other non-traditional hydrocarbons. There are far more of hydro-carbons in these formations than traditional oil reservoirs—a fact that many Peak Oil advocates frequently ignore. Or if they acknowledge their existence, they dismiss them as uneconomical or technologically impossible to exploit and therefore will never make a significant contribution to global energy supplies.

Hubbert failed to appreciate the potential contribution of these unconventional sources of synthetic oil. For instance, he put the total for US oil shales at around a trillion barrels of oil equivalent. Recently the USGS estimated that the Green River drainage area of Colorado, Wyoming and Utah may contain as much as   4.2 trillion barrels of in place oil equivalent in oil shale deposits. To put this into context, the US currently consumes around 24 billion barrels of oil in 2010, so even if a fraction of these [oil shales](http://www.eia.gov/tools/faqs/faq.cfm?id=36&t=6) are exploited it will significantly increase available energy to the US.

With unconventional oils like tar sands, oil shales, heavy oils, etc. included, it seems we have huge amounts of potential energy–even acknowledging that much of that oil may not be extracted until some future date due to cost and/or lack of technology.

#### Technological advances and drilling methods mean oil peak is nonsense

**Worstall, ’11** - Fellow at the Adam Smith Institute in London,;  English writer and blogger, who writes about a variety of topics, but particularly about economics; works as a consultant and dealer in scandium and other exotic/rare earth metals (Tim, “Peak Oil, Entirely Nonsense: As is Peak Gas”, Forbes, 10/19/11, http://www.forbes.com/sites/timworstall/2011/10/19/peak-oil-entirely-nonsense-as-is-peak-gas/)//AY

One of the things that really rather annoys me about the peak oil (and in the UK, there’s a similar one about peak gas) argument is that it entirely ignores the impact of changing technology. The point is indirectly made here at [The Guardian](http://www.guardian.co.uk/commentisfree/2011/oct/18/energy-price-volatility-policy-fossil-fuels):

The Earth’s crust is riddled with fossil fuels. The issue is not whether there is a shortage of the stuff, but the costs of getting it out. Until recently, the sheer abundance of low-cost conventional oil in places like the Middle East has limited the incentives to find more, and in particular to go after unconventional sources. But technical change has been driven by necessity – and the revolution in shale gas (and now shale oil, too) has already been transformational in the US, one of the world’s biggest energy markets.

And to make the point more directly. Once we invent a new technology to extract oil or gas (or indeed any other mineral you might like to think of) this does not mean that we’ve just found that one new field that we’ve developed the new technology to extract oil or gas from. It means that we’ve just created a whole new Earth, an entire new planet that we can prospect for similar deposits that can be exploited with the new technology.

To take a few examples, BP’s Macondo well was the first to drill down to 5,000 feet below the sea bed. Previously we had only been drilling perhaps a couple of thousand feet below the sea bed. Now it is true that that particular well didn’t work out so well (sorry) but the basic point still stands: that we now have the entire planet to prospect again at 5,000 feet down, not just the 2,000 feet down that the previous technology afforded, to see how much oil there is.

The Bakken Shale in North Dakota. This has propelled the State into the number three oil producing State in the nation. But now that we’ve found the technology to get oil from oil shales this does not mean that we’ve only found the Bakken Shale. This means that we want to scour the entire planet for other oil shales that can be exploited using the same technology.

The Marcellus Shale, the technologies developed to exploit that gas shale: this does not mean that we’ve only got the gas from the Marcellus Shale. It means that we’ve now got the whole Earth to explore again for shales that we can exploit using that same fracking technology. As Cuadrilla Resources has just found out in Lancashire. As most people don’t know as yet, British Gas had explored that very same shale some 20 years ago. They knew the shale was down there, there was just no way of extracting the gas at that point. Now there is and there are other fields in Poland, China and so on as well.

In fact, what seems to be becoming a consensus among some geologists is that shales are abundant (oil shales come from terrestrial plants, gas from marine) and what we’ve been thinking of for a century or two as oil or gas deposits are just those few places where geology has done the fracking and collection for us already. Now that we’ve developed fracking, to do what geology hasn’t done in the far more numerous shales, there just really isn’t any long term, long term meaning century or more, shortage of oil and or gas.

#### Oil peak empirically denied and future tech will increase market for oil

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It is almost always a mistake to assume you know where energy bills are going. This is especially true for secretaries of state, and energy policy should never be based upon assuming you know what the future will bring. Unfortunately, it is the new conventional wisdom and an[assumption prevalent across much of Europe](http://www.ft.com/cms/s/fb79d97e-f7fd-11e0-8e7e-00144feab49a%2CAuthorised%3Dfalse.html?_i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fs%2F0%2Ffb79d97e-f7fd-11e0-8e7e-00144feab49a.html&_i_referer=#ixzz1b1sKYiuO).

Yet Chris Huhne, the British secretary of state for energy and climate change, is pretty sure that oil and gas prices are going ever upwards, that they will be volatile and that a core function of energy policy is to protect British industry and consumers from the consequences. It is a convenient assumption for renewables and nuclear: if the price of fossil fuel is going to get more expensive, then renewables and nuclear will be relatively cheap. Add in energy efficiency, and then it can be predicted that energy bills will fall if these technologies are supported.

The last time policymakers were this sure was the last time oil prices peaked – back in 1979. Oil peaked at $39 a barrel (around $150 in today's prices). It was assumed then that oil prices would go ever up, and the incoming Conservative government launched a plan to build one nuclear reactor per annum for 10 years. Instead, prices collapsed in the mid 1980s, and didn't return to the 1979 prices for more than a quarter of a century (even with two Gulf wars).

As then, we are led to believe that the world's fossil fuel resources are finite and known, and that the peak of production has either been already met or will come soon. Gas, it is assumed, will follow oil. Put simply, we are going to run out of fossil fuels, and they will therefore get (much) more expensive. For the peak oil advocates, the convenient truth is that de-carbonisation via renewables and nuclear is not only good for the climate, but sound economics too. Almost all of this is nonsense – and some of it is dangerous nonsense. There is enough oil and gas (and coal too) to fry the planet several times over. The problem is there may be too much fossil fuel, not too little, and that fossil fuel prices might be too low, not too high.

The Earth's crust is riddled with fossil fuels. The issue is not whether there is a shortage of the stuff, but the costs of getting it out. Until recently, the sheer abundance of low-cost conventional oil in places like the Middle East has limited the incentives to find more, and in particular to go after unconventional sources. But technical change has been driven by necessity – and the revolution in shale gas (and now shale oil, too) has already been transformational in the US, one of the world's biggest energy markets.

New technological developments take time to penetrate markets, and customers may not feel the benefits for quite a while. But it would be a mistake to assume they won't eventually. Even worse, it would be wrong to design energy policy to protect them from price volatility so that if gas prices fall, they will be prohibited from gaining the benefits.

It is also wrong to assume the renewables and nuclear will pay for themselves – and that therefore they are going to be cheap alternatives (though we would then at least be able to get rid of any subsidies). This was ultimately the real weakness of the [Stern review](http://www.guardian.co.uk/politics/2006/oct/30/economy.uk), and why politicians fell over themselves to quote its 1% GDP per annum costs for tackling climate change. Customers were led to believe it would not hurt them, and hence were happy to support green policies. But now they are finding out that it isn't true, and the backlash has started. The very real risk is that having been misled by politicians, they start to doubt the veracity of climate change.

Is there another way forward, which enables possibly cheaper gas to feed through to customers without undermining attempts to reduce emissions? The answer is – at least for the next couple of decades – yes. At the global level, the reason emissions keep going up – and why[Kyoto](http://unfccc.int/kyoto_protocol/items/2830.php) has made so little difference – is that coal is the rising fuel; its share has risen from around 25% to nearly 30% during the Kyoto period, and it is a percentage of a growing total. Switching from coal to gas is cheap – and it cuts emissions by roughly half. It doesn't solve the climate change problem in the long run, but it gets emissions down much faster and much cheaper than all those offshore windfarms in the short to medium term.

#### Constraint in the market causes high oil prices – prices don’t mean peak oil

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**Q: There is a popular concern about 'peak oil' and the availability of oil. But what you are saying is that, overall, there is no shortage but rather a constraint in the market, due partially to higher growth from India and China?**

A: There is no resource constraint at the moment for oil. There is enough oil if you're willing to accept the costs – including the environmental costs for sources like tar sands.

There is an access problem. Which means that on the back of these high prices it becomes more and more difficult for oil companies to go and do what they do best, which is to, in response to high oil prices, maximise production.

One has to recognise that that is a potential problem, because the reaction to high oil prices is different between companies and governments.

Oil companies will try to maximise output to maximise profits when oil prices are high, and they will do so in competition with each other even to their own long-term detriment, meaning even if they create excess capacity and economic cycles.

A government is different in that it will try to maximise the long-term revenues from its rent. You will hardly ever see governments engage in price competition with each other. And they will try to keep all the rent in their countries, meaning limiting access to foreign companies, and all of this slows down the investment rates.

We now live in a world where a cartel no longer controls 40% of production, the cartel makes movements and the rest of the world reacts. Now there is another 40% to 50% controlled by governments in one form or another, and that slows down the supply response.

But that is an above ground problem, a political problem, which means that we cannot invest in many countries. Latin America and Mexico are examples. Russia is another example.

#### Inevitable transition to renewable solve the impact

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 Iss. 2, 2009, <http://dl2af5jf3e.search.serialssolutions.com.proxy.lib.umich.edu/?ctx_ver=Z39.88-2004&ctx_enc=info:ofi/enc:UTF-8&rfr_id=info:sid/ProQ&rft_>

val\_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.jtitle=Federal+Reserve+Bank+of+Atlanta+Economic+Review&rft.atitle=The+Peak+Oil+Debate&rft.a

u=Graefe%2C+Laurel&rft.date=2009-01-01&rft.volume=94&rft.issue=2&rft.spage=1&rft.isbn=&rft.btitle=&rft.title=Federal+Reserve+Bank+of+Atlanta+Economic+

Review&rft.issn=0732-1813)//AY

 During the five-year period from 2003 through 2007, global economic growth accelerated precipitously, led by the world's increasingly energy-intensive developing countries (see figure 5); this rapid growth placed significant pressure on the global oil balance and contributed to an unprecedented price spike. From January 2007 through July 2008, the price of crude oil nearly tripled (figure 6), jolting businesses and consumers around the globe. The high prices were generally thought to be at least in part a result of tightening oil market fundamentals (energy demand outpacing supply); some, however, including OPEC, maintained that market fundamentals were healthy but that financial market speculation and movements in the dollar exchange rate were driving the run-up in prices (OPEC 2008).12

Regardless of the cause, the oil price spike had undeniable economic and social consequences across the globe. Hamilton (2009, 40) considers the 2007-08 oil price spike a critical factor that helped tip the United States into recession, finding that, "had there been no oil shock, we would have described the U.S. economy in 2007:Q4-2008:Q3 as growing slowly, but not in recession." A wide range of estimates gauge the negative effect of a rising oil price on the global economy, with impacts on developing economies and oil-importing countries generally considered to be much greater than in developed countries.13

However, the price spike also had an upside: Consumers began to drive less and conserve more, while businesses and producers set out ambitious plans to invest in energy-saving technology and upgrade outdated equipment. Alternative (both nonconventional and renewable) sources of energy, which historically had been price prohibitive, emerged as attractive substitutes to $145 per barrel oil and gasoline above $4 a gallon. World oil demand plummeted as record prices and a worldwide economic slowdown forced consumers to cut back on their energy use. But just as talk of a new green era was entering the mainstream, crude prices retreated as quickly as they had come.

What role do prices ultimately serve in respect to long-term oil supply? Some economists would point out that, even absent any major policy initiatives, society should naturally move away from conventional oil as it approaches peak because rising prices will make substitutes more economically attractive. Hotelling (1931) explained that a rising oil price in anticipation of future supply declines will allow time for a transition to an alternative or nonconventional source of energy (or more conservation) before the cut-back becomes physically necessary. According to Hotelling's rule, as long as information is transparent and markets are free to operate efficiently, since the price of oil includes the knowledge of future supply declines, preparation for peak oil will occur naturally because the market will establish an efficient allocation of oil over time. 14