# VMT Aff

## AT: Aerosols

### Transportation Sector ≠ SO2

The transportation sector does not significantly emit SO2

Bloomberg 12 (global provider of financial news and information including real price data, financials data, trading news and analyst coverage, as well as general news, “EPA Sulfur Dioxide Rules Upheld By U.S. Court Of Appeals” By Tom Schoenberg <http://www.bloomberg.com/news/2012-07-20/epa-sulfur-dioxide-rules-upheld-by-u-s-court-of-appeals.html>) APB

U.S. limits for sulfur-dioxide emissions from power plants, factories and industrial sources were upheld by a federal appeals court, which rejected a lawsuit brought by North Dakota and Texas.¶ A three judge panel of the U.S. Appeals Court in Washington said today that the Environmental Protection Agency didn’t act “arbitrarily” in setting the 2010 rule that restricts sulfur- dioxide levels in the air to 75 parts per billion over a one- hour period.¶ “EPA cites evidence that current levels of SO2 in the ambient air, even when the air quality meets the current SO2” standards, “still cause respiratory effects in some areas,” U.S. Circuit Judge David Sentelle wrote in the opinion.¶ The regulation revokes standards for the pollutant adopted in 1971 that included limits of 140 parts per billion measured over 24 hours. North Dakota and Texas were among five states that sued over the rule.¶ The EPA cited research that shows short-term exposure to sulfur pollution poses a greater health threat than past rules took into account, including risks to children, the elderly and people with asthma. Power plants account for almost 70 percent of sulfur dioxide in the air, according to the EPA.¶ On July 13, a different appeals court panel in Washington upheld EPA’s standards for nitrogen dioxide.¶ The case is National Environmental Development Association’s Clean Air Project v. Environmental Protection Agency, 10-1252, U.S. Court of Appeals for the District of Columbia (Washington).. Only 3.7 percent is caused by transportation.

## AT: Don’t Solve China

### China is Pursuing Road Pricing

#### China is already experimenting with road pricing, the US is key.

Samuel 11 (Peter, lead author of the Reason study and staff on Toll Roads News, *Toll Roads News*, “Chinese plans for congestion charges - US-style on highways, not zonal”, October 3,http://www.tollroadsnews.com/node/5516, 7/20/12, AH)

Three Chinese cities are planning to introduce urban congestion charges within the next few years in a bid to head off worsening gridlock – the national capital Beijing (pop 20 million); Shenzen, the financial capital of southern China (pop 9 million); and Chongqing, a major automotive production center in the south west of country (pop 29 million). In 2009, China overtook the US to become the world's largest auto market. The recent rapid growth in car ownership has caused traffic problems in most major Chinese cities, with Beijing forecast to have seven million vehicles on its roads by 2012. Here plans for congestion charging is most advanced. A cluster of consulting companies and research institutes in China’s Silicon Valley, the Zhongguancun Science and Technology Zone in Beijing’s Haidian district, have been commissioned to carry out detailed technical studies designed to set the scene for implementing charging in the Chinese capital. The project is one of six priority ITS 'showcase' projects for Beijing being given the green light in 2011, according to Professor Jianping Wu, Director of the UK/China Joint ITS Centre at the University of Southampton, UK and China Liaison Officer of ITS UK. They don't yet have estimates of the likely scale of charges or of the methods to collect them; nor a clear schedule for the project. There is controversy. Wang Li-Mei, the Secretary-General of the China Road Transport Association, says “congestion charging is a complex project. Preliminary studies to date fall short of making the case for a scheme in Beijing”. “Charging would not be technically difficult”, says China’s ‘Mr Traffic Jam’, Professor Duan Li-Ren of Chang-An University in Xian, bringing to bear his experience as a former traffic policeman and later Deputy Director of the Beijing Traffic Department. “But it still needs detailed research on charging systems, geographical scope and acceptability issues”. Duan who is in his 70s is an inveterate traveler and has spent much of the last ten years studying congestion in 300 towns and cities in 30 countries and amassing a library of 300,000 photographs of queuing traffic. He points to the “real benefits” gained from the London congestion charging scheme, introduced in 2003. As in London, he stresses that, to win public support, “the funds raised from the congestion charge would have to be seen to be reinvested into transit. Some exemptions or at least a discount rate might have to be granted to residents within the charge zone”. (In a recent survey, residents voted for an HOV-type approach). In Beijing focus is - US style - on variable pricing of major congested corridors.

# Elections Updates

## Elections Aff: GOP can’t beat filibuster

### GOP can’t overcome Filibuster

#### Even if Republicans win a slim majority, it isn’t enough to pass legislation over a Senate filibuster**Waddell 12** (Melanie, Washington Bureau Chief and Editor of the Practice Channel, 20 year financial reporter, *“11 Predictions for 2012 Election by UBS: The Issues,”* Advisor One, February 23, 2012, <http://www.advisorone.com/2012/02/23/11-predictions-for-2012-election-by-ubs-the-issues>) PCS

1) UBS predicts President Barack Obama will win a second term. Improving economic conditions and firming job approval ratings should help the president win the election. 2) Republicans appear poised to win a narrow majority in the Senate and to retain a slimmed-down majority in the House. Heading into the election, Democrats hold a narrow 53-seat majority (which includes two Independents who caucus with the Democrats) in the Senate. Of the 33 Senate seats up for re-election in November 21 are held by Democrats, two are Independent and 10 are Republican. With the entire House up for re-election, Democrats would need to pick up 25 seats from Republicans in order to regain the majority. This would appear to be a pretty daunting task. Keep in mind that congressional redistricting following the release of the 2010 Census data largely benefited Republicans, since the population rose in predominantly Republican-leaning states and declined in states that tend to support Democrats. 3) Expect continued gridlock, since Senate Democrats will likely retain enough seats to prevent the passage of major legislation. With broad philosophical issues about the size and role of government, compromise seems unlikely. Republicans have a chance to gain a majority in both houses, but without a large enough margin to overcome a filibuster in the Senate, the parties will still be sharing power.

## Elections Aff: EPA Impact Turn Extensions

### Natural Gas Shift = Warming

#### Using NG as a transition fuel may worsen the global warming situation.

Howarth et al 11 (Robert W, Renee Santoro1 & Anthony Ingraffea, Professors at Cornell University, 4-10, http://thehill.com/images/stories/blogs/energy/howarth.pdf, 7-8-11, AH)

Although natural gas is promoted as a bridge fuel over the coming few decades, in part because of its presumed benefit for global warming compared to other fossil fuels, very little is known about the GHG footprint of unconventional gas. Here, we define the GHG footprint as the total GHG emissions from developing and using the gas, expressed as equivalents of carbon dioxide, per unit of energy obtained during combustion). The GHG footprint of shale gas has received little study or scrutiny, although many have voiced concern. The National Research Council (2009) noted emissions from shale-gas extraction may be greater than from conventional gas. The Council of Scientific Society Presidents (2010) wrote to President Obama, warning that some potential energy bridges such as shale gas have received insufficient analysis and may aggravate rather than mitigate global warming. And in late 2010, the U.S. Environmental Protection Agency issued a report concluding that fugitive emissions of methane from unconventional gas may be far greater than for conventional gas (EPA 2010). Fugitive emissions of methane are of particular concern. Methane is the major component of natural gas and a powerful greenhouse gas. As such, small leakages are important. Recent modeling indicates methane has an even greater global warming potential than previously believed, when the indirect effects of methane on atmospheric aerosols are considered (Shindell et al. 2009). The global methane budget is poorly constrained, with multiple sources and sinks all having large uncertainties. The radiocarbon content of atmospheric methane suggests fossil fuels may be a far larger source of atmospheric methane than generally thought (Lassey et al. 2007).

#### Natural gas produces more greenhouse gas overtime than oil and coal.

Leggett 11 (Martin, Earth Times, 3-22, http://www.earthtimes.org/energy/dangers-hydraulic-fracturing-poisoned-water-supplies-earthquakes/552/, 7-8-11, AH)

But for proponents of the shale gas rush, these are just teething problems - better monitoring, improved technology and tighter regulations will put them to rest. Then we can all march bravely forward into a low-carbon future - with a shale gas reserve which could easily last the US out for 100 years. After all, natural gas has a much lower carbon emission intensity than dirty coal or fuel oil. Is the squeaky clean cousin of the fossil-fuel family. The problem with this analysis is that it is typically, and usefully, short-sighted. The total effect on greenhouse gas emissions are more complicated than just comparing combustion efficiencies. You need to look at the full life cycle of all emissions from extracting, transporting and using a fuel. That's what a Cornell University professor did. And shockingly, over a 20 year timescale, shale gas has a higher greenhouse gas footprint than coal and oil. That's because of the conveniently forgotten role of methane, a potent greenhouse gas, which is released during shale gas fracking. That makes the continued exploitation of this resource part of the problem, and not the solution. Instead of a clean energy savior, shale gas is another green-tinged diversion from the task in hand. And the only promising future that it holds out is for a profit-lined one for the big gas and drilling companies.

### Natural Gas Demand = Fracking

#### Increased demand on natural gas leads to mining that causes global warming

Sunmoni, 5/11 ( Mobolaji, Graduate Environmental Scientist, THE ENVIROMENTALIST, Gas Fracking, <http://ecoremediation.blogspot.com/2012/05/gas-fracking.html>,5/11/12, Accessed 7/22/12, Azimi)

As energy demand increases, there is more dependence on natural gas which is found in large reservoirs in deep underground natural rock formations or other hydrocarbon reservoirs such as coal beds. The downside of the use of natural gas to produce electrical energy and heat is the emission of greenhouse gases such as methane and carbon dioxide into the atmosphere. These gases cause the greenhouse effect that leads to global warming and climate change. (See earlier posts for the greenhouse effect, global warming and climate change) ¶ Since we now have a basic understanding of what natural gas is, Gas Fracking was actually coined from the term 'Hydraulic Fracturing' or 'Hydrofracking' and then 'Fracking'. It is basically a technique used to extract petroleum and natural gas, particularly shale gas from rock formations. Shale gas is natural gas trapped in a type of sedimentary rock (made up of components such as clay, silt and other minerals such as quartz and calcite). As unlike natural gas found in underground reservoirs associated with petroleum or in gas fields, shale gas, trapped in rocks, require a different approach for its extraction.

### Fracking Bad- Pollution

#### Natural Gas Fracking creates highly contaminated drinking water

Urbina 11

(Ian investigative reporter for the New York Times, “Regulation Lax as Gas Wells’ Tainted Water Hits Rivers” February 26th 2011, <http://www.nytimes.com/2011/02/27/us/27gas.html?pagewanted=1> accessed 7/20/12) ZLH

But the relatively new drilling method — known as high-volume horizontal hydraulic fracturing, or hydrofracking — carries significant environmental risks. It involves injecting huge amounts of water, mixed with sand and chemicals, at high pressures to break up rock formations and release the gas. With hydrofracking, a well can produce over a million gallons of wastewater that is often laced with highly corrosive salts, carcinogens like benzene and radioactive elements like radium, all of which can occur naturally thousands of feet underground. Other carcinogenic materials can be added to the wastewater by the chemicals used in the hydrofracking itself. While the existence of the toxic wastes has been reported, thousands of internal documents obtained by The New York Times from the Environmental Protection Agency, state regulators and drillers show that the dangers to the environment and health are greater than previously understood. The documents reveal that the wastewater, which is sometimes hauled to sewage plants not designed to treat it and then discharged into rivers that supply drinking water, contains radioactivity at levels higher than previously known, and far higher than the level that federal regulators say is safe for these treatment plants to handle. Other documents and interviews show that many E.P.A. scientists are alarmed, warning that the drilling waste is a threat to drinking water in Pennsylvania. Their concern is based partly on a 2009 study, never made public, written by an E.P.A. consultant who concluded that some sewage treatment plants were incapable of removing certain drilling waste contaminants and were probably violating the law. The Times also found never-reported studies by the E.P.A. and a confidential study by the drilling industry that all concluded that radioactivity in drilling waste cannot be fully diluted in rivers and other waterways. But the E.P.A. has not intervened. In fact, federal and state regulators are allowing most sewage treatment plants that accept drilling waste not to test for radioactivity. And most drinking-water intake plants downstream from those sewage treatment plants in Pennsylvania, with the blessing of regulators, have not tested for radioactivity since before 2006, even though the drilling boom began in 2008. In other words, there is no way of guaranteeing that the drinking water taken in by all these plants is safe. That has experts worried. “We’re burning the furniture to heat the house,” said John H. Quigley, who left last month as secretary of Pennsylvania’s Department of Conservation and Natural Resources. “In shifting away from coal and toward natural gas, we’re trying for cleaner air, but we’re producing massive amounts of toxic wastewater with salts and naturally occurring radioactive materials, and it’s not clear we have a plan for properly handling this waste.”

#### Contaminated freshwater destroys habitats and harms human health.

Jackson and Running 2001

(Robert B Nicholas Chair of Global Environmental Change at the Nicholas School of the Environment, Steven W Regents Professor/Director College of Forestry & Conservation, University of Montana, Missoula, “Water in a Changing World”, Issues in Ecology, Ecological Society of America, Spring 2001 <http://www.biology.duke.edu/jackson/issues9.pdf>)

Life on earth depends on the continuous flow of materials through the air, water, soil, and food webs of the biosphere. The movement of water through the hydrological cycle comprises the largest of these flows, delivering an estimated 110,000 cubic kilometers (km3) of water to the land each year as snow and rainfall. Solar energy drives the hydrological cycle, vaporizing water from the surface of oceans, lakes, and rivers as well as from soils and plants (evapotranspiration). Water vapor rises into the atmosphere where it cools, condenses, and eventually rains down anew. This renewable freshwater supply sustains life on the land, in estuaries, and in the freshwater ecosystems of the earth. Renewable fresh water provides many services essential to human health and well being, including water for drinking, industrial production, and irrigation, and the production of fish, waterfowl, and shellfish. Fresh water also provides many benefits while it remains in its channels (nonextractive or instream benefits), including flood control, transportation, recreation, waste processing, hydroelectric power, and habitat for aquatic plants and animals. Some benefits, such as irrigation and hydroelectric power, can be achieved only by damming, diverting, or creating other major changes to natural water flows. Such changes often diminish or preclude other instream benefits of fresh water, such as providing habitat for aquatic life or maintaining suitable water quality for human use

### Fracking Bad- Warming

#### GHG emissions from natural gas causes global warming

Ingraffea et al 11 (Anthony, School of Civil and Environmental Engineering at Cornell University, R.W. Howarth and R. Santoro, Department of Ecology and Evolutionary Biology at Cornell University, “Methane and the Greenhouse Gas Footprint of Natural Gas from Shale Formations,” Springer, March 13, 2011, <http://www.sustainablefuture.cornell.edu/news/attachments/Howarth-EtAl-2011.pdf>) PCS

The GHG footprint of shale gas is significantly larger than that from conventional gas, due to methane emissions with flow-back fluids and from drill out of wells during well completion. Routine production and downstream methane emissions are also large, but are the same for conventional and shale gas. Our estimates for these routine and downstream methane emission sources are within the range of those reported by most other peer-reviewed publications inventories (Hayhoe et al. 2002; Lelieveld et al. 2005). Despite this broad agreement, the uncertainty in the magnitude of fugitive emissions is large. Given the importance of methane in global warming, these emissions deserve far greater study than has occurred in the past. We urge both more direct measurements and refined accounting to better quantify lost and unaccounted for gas. The large GHG footprint of shale gas undercuts the logic of its use as a bridging fuel over coming decades, if the goal is to reduce global warming. We do not intend that our study be used to justify the continued use of either oil or coal, but rather to demonstrate that substituting shale gas for these other fossil fuels may not have the desired effect of mitigating climate warming. Finally, we note that carbon-trading markets at present under-value the green- house warming consequences of methane, by focusing on a 100-year time horizon and by using out-of-date global warming potentials for methane. This should be corrected, and the full GHG footprint of unconventional gas should be used in planning for alternative energy futures that adequately consider global climate change.

#### Fracking leads to global warming impacts quicker than CO2

Michler 12 (Andrew, Associate at Rocky Mountain Passive House, Chair at Northern Colorado Renewable Energy Society, “Updated Cornell Study Shows Fracking Causes More Global Warming than Coal,” Inhabitat, April 17, 2012, <http://inhabitat.com/updated-cornell-study-shows-fracking-causes-more-global-warming-than-coal/>) PCS

Hydraulic fracking is getting a pretty bad reputation for its potential to pollute water, cause cancer, and trigger earthquakes — need we go on? But a new study from Cornell reports that the natural gas extraction technique may be more harmful than even coal when it comes to global warming. The research team has updated their controversial findings with fresh data to support the conclusion that fracking in a major source of released methane. The study looks at how much gas is released into the atmosphere, revealing a significant jump in atmospheric methane. Methane, as compared to CO2, has the potential to trap over 100 times more heat over the course of ten years, making fracking one of the most environmentally destructive ways to source energy. Natural gas has been herald as a ‘bridge fuel’ from coal to renewable energy because of its capacity to generate electricity with a significantly smaller CO2 footprint. The danger of using natural gas is that any leaks or release of it into the atmosphere is potentially much more significant than burning other carbon fuels. The Cornell study, released last year in Climatic Change Letters, was lead by Professor of Ecology and Environmental Biology [Robert Howarth](http://vivo.cornell.edu/display/individual5400), and is the first of its kind to study the global warming impact of natural gas extraction from shale deposits. The conclusion was that fracking releases up to 8% of the extracted methane directly into the atmosphere, and reports that all methane will contribute to 44% of global warming. The significant jump in leaked gas using fracking compared to conventional gas wells is due to the size of the fracking wells and how they operate; fracking wells take more time to drill before being capped, require more venting, and there is an issue of flowback waste. Critics (including another [Cornell study](http://www.cnycentral.com/news/story.aspx?id=709397#.T42mH6tYuf5) disputing the findings) pointed to the low quality of the data from the initial report, which the team responded to with fresh EPA data on releases of methane at drilling sites. In fact, towns where fracking is popular have [measured spikes in methane levels](http://www.ncbr.com/article/20120222/NEWS/120229962) since the report was released. If Howarth’s conclusions are even in the ballpark, it shows how important better data gathering is, and puts pressure on the industry and government to study fracking’s full impact. The results also draw a stark contrast between [the political pandering](https://mail-attachment.googleusercontent.com/attachment/?ui=2&ik=5cfde24f86&view=att&th=136ac70b6e6fa020&attid=0.1.1&disp=inline&safe=1&zw&saduie=AG9B_P84oFm8bZm_NJ_5jTbB1J_X&sadet=1334466450307&sads=zoWAbFg9bMsYQ63iBEnhwN-r5gM&sadssc=1) of alternative gas extraction and its reality. The study put another nail in the reliability of shale gas extraction and makes natural gas look more like the [bridge to nowhere](http://inhabitat.com/new-study-shows-natural-gas-is-a-bridge-fuel-to-nowhere/).

## Neg- AT: Natural Gas Impact Turn

### Not Unique- Natural Gas Demand High

#### Natural gas demand is on the rise

RTT News 12 (Global Financial Newswire, Demand, “Consumption Increase For U.S. Natural Gas,” RTT News, May 31, 2012, <http://www.rttnews.com/1897792/demand-consumption-increase-for-u-s-natural-gas.aspx>) PCS

Demand for natural gas is on the rise, and is expected to climb over 50 percent by 2035, the International Energy Agency said Tuesday. Also, Exxon Mobil Corp. top executives believe that escalating demand will make natural gas the second largest primary energy source by 2040. The estimates show that gas could possibly take up 25 percent of global energy by 2035 surpassing coal, but remaining second to the world's top energy source - oil. More recently there has been an increase in natural gas use by 40 percent in March compared to a year earlier, according to the U.S. Energy Information Administration's Electric Power Monthly report. Also in the EIA report, use of coal dropped by 20 percent. Exxon Mobil CEO Rex Tillerson is already anticipating natural gas overtaking coal as a prime energy source when Exxon Mobil became the nation's largest gas producer after acquiring XTO Energy for $25 billion in 2010. "We're studying the possibilities of exporting natural gas from North America, from both the U.S. and Canada, because of the abundant supply that has now been confirmed in North America," CEO Rex Tillerson told shareholders on Wednesday. Skyrocketing gas production in North America has amped up supply, and Exxon Mobil is no exception with the Irving, Texas based company having lots of gas it wants to sell. According to the IEA, the upswing in production of unconventional gas in North America prolonged the potential of further demand increases in the US and Canada. Furthermore, the IEA said the sharp increase in gas production also prolonged "the emergence of a large-scale unconventional gas industry in other parts of the world, where sizeable resources are known to exist." In the IEA special report, Golden Rules for a Golden Age of Gas, said more demand and continual production of non-conventional gas would aid in energy security, increase energy diversity, and reduce energy costs.

#### Natural gas is inevitable- demand is already increasing

Wald 10 (Matthew, energy topic reporter at The New York Times, awarded the Google Science in Action Award, “Study Says Natural Gas Use Likely to Double,” The New York Times, June 25, 2010, <http://www.nytimes.com/2010/06/25/business/energy-environment/25natgas.html>) PCS

WASHINGTON — Natural gas will provide an increasing share of America’s energy needs over the next several decades, doubling its share of the energy market to 40 percent, from 20 percent, according to a report to be released Friday by the Massachusetts Institute of Technology. In the long term, however, the future may be dimmer for natural gas if stricter regulations are put in place to cut greenhouse gas emissions by 80 percent below 1990 levels by 2050 — a goal set by President Obama. Although lower in carbon than coal, natural gas is still too carbon-intensive to be used under such a target absent some method of carbon capture, the authors of the report concluded. The report, one of a series on energy resources, is the result of a two-year effort by 14 prominent energy experts, led by Ernest J. Moniz, an M.I.T. professor who is a former under secretary of energy. Previous reports focused on nuclear power and coal. The report was financed in part by the American Clean Skies Foundation, which represents the interests of the natural gas industry. In the report, the authors point out that there is a mismatch between current energy practice in the United States and the nation’s energy goals. As zero-carbon wind is added to the national electric system, the report said, it is being used to reduce consumption of natural gas, which is relatively benign in carbon impact, rather than coal, which has twice as much carbon dioxide per kilowatt-hour. The reason is that gas is more expensive than coal. Gas will eventually replace some of the coal used to make electricity, the study predicts, and gas will be the benchmark against which other carbon-saving technologies like wind or nuclear will be measured. But those other technologies will eventually be needed. Some companies that make equipment for coal- and gas-fired generating stations say that the switch to gas from coal has already begun. One reason is that switching to gas will make it easier to meet air quality standards for conventional pollutants like smog and mercury.

### Natural Gas Solves Warming

#### Natural gas cuts down greenhouse gases

Drajem 12 (Mark, Bloomberg News Journalist, “New Research Rebuts Fracking- Global Warming Connection,” Tulsa World News, July 11, 2012, <http://www.tulsaworld.com/business/article.aspx?subjectid=49&articleid=20120711_49_E2_Replac891462>) PCS

Replacing coal with natural gas cuts the creation of greenhouse gases that cause global warming, a Cornell University researcher has concluded, rebutting the findings of colleagues at the university in Ithaca, N.Y. Lawrence M. Cathles, a professor in Earth and Atmospheric Sciences, released a paper that says even if high rates of natural gas are leaking out after hydraulic fracturing and during transport, gas will still provide a net benefit over time. "The only thing that really counts is the amount of carbon dioxide you put in the atmosphere," Cathles said in an interview Tuesday. Because gas releases less carbon dioxide than coal or oil when combusted, "the story is quite clear that we would be very well advised to substitute natural gas." The impact of natural gas on climate change has attracted attention as the spurt in production from hydraulic fracturing, or fracking, has pushed down prices and prompted power producers to shift from coal to gas. Utilities generated as much power from natural gas as coal in April, the first time natural gas equaled coal generation since the government started keeping those records, in 1973, and the Energy Information Agency said July 6. Cathles' Cornell colleagues Robert Howarth and Anthony Ingraffea published an article last year that said leaks of methane from fracking, in which water, chemicals and sand are pumped into the ground to break apart rock and free gas, mean the use of natural gas could actually cause more global warming than coal. The differences between the researchers hinge on two points: First, estimates of venting and leakages during gas production, and second, the time frame evaluated. Methane is a more potent greenhouse gas than carbon dioxide, but it's removed from the atmosphere in less than 20 years, while carbon dioxide can persist for centuries. Electricity production is the primary source of greenhouse-gas emissions in the U.S., according to the Environmental Protection Agency. Howarth and Ingraffea used data from the EPA to develop its estimate of a leakage rate of up to 7.9 percent for methane, the key component of natural gas. Cathles says that estimate is off, basing his analysis on subsequent industry data and the fact that the release of that much natural gas would be both unhealthy and could pose a danger of explosion. Also, companies wouldn't allow that much gas to escape freely, he said. "It's just an impossible number," he said. Cathles estimates that it is more likely less than 2 percent of production. Still, even if 10 percent of methane is being released, conversion to natural gas will still mean an almost 40 percent reduction in greenhouse gases beginning in a little more than a century and extending out for centuries to come. Howarth and Ingraffea analyzed the impacts of natural gas compared with coal over the next two decades and one century.

#### Fracking decreases emissions

Whittington 12 (Mark, Houston Clean Energy Examiner, journalist, “Natural Gas Fracking Causes Plunge in C02 Emissions,” The Examiner, July 18, 2012, <http://www.examiner.com/article/natural-gas-fracking-causes-plunge-co2-emissions>) PCS

Natural gas fracking, in which fluids are injected in a shale formation to force natural gas to the surface, has caused an economic boom in places such as the Eagle Ford formation in south Texas, according to CNBC. The natural gas fracking boom seems also to have fixed a situation that has vexed environmentalists, according to Investor’s Business Daily. The natural gas fracking boom has caused a plunge in CO2 output, down to 1990s levels. The reason that CO2 output has plunged since 2007 is that cheap natural gas, brought about by the fracking boom, has begun to replace carbon dioxide emitting sources of energy such as coal. Power companies have eschewed building coal fired plants and have even retired old plants in favor of natural gas fueled power plants. This environmental revolution has happened without cap and trade or any other heavy-handed government mandate. CO2 emissions, which are said to cause global warming, have dropped because of the workings of the free market. The environmental benefits to natural gas fracking have come with a dose of irony, mainly because the process has gotten a bad rap from environmentalists. The Austin American Statesman raised an alarm last year about alleged health and environmental effects of fracking in Eagle Ford, without actually offering any evidence that such existed. An HBO film called Gasland, which has been thoroughly debunked, blames fracking for a whole host of environmental disasters. A recent episode of the TNT crime drama Rizzoli and Isles demonized fracking as environmentally destructive, depicting the process as being conducted by criminals and mercenaries. The link between CO2 emissions and climate change or global warming is controversial, to say the least. But if one believes in that sort of thing, one should necessarily embrace natural gas fracking as a solution to that alleged problem and not oppose it as environmentally harmful.