### Observation 1 is the status quo

#### Current and future regulations will collapse the gas industry

**Hunt ‘12**

Gary Hunt is President, Scalable Growth Strategy Advisors, an independent energy technology and information services adviser and a partner in Tech & Creative Labs, a disruptive innovation software collaborative of high tech companies focused on the energy vertical. He served as VP-Global Analytics & Data at IHS/CERA; global Division President at Ventyx, now an ABB company; and Assistant City Manager-Austin Texas responsible for Austin Energy and Austin Water. 5-27-12, Oil Price, Federal Rules Threaten to Suffocate the Fracking Industry <http://oilprice.com/Energy/Natural-Gas/Federal-Rules-Threaten-to-Suffocate-the-Fracking-Industry.html>, jj

**Federal Rules Threaten to Suffocate the Fracking Industry**

In Medieval times one form of dispatching miscreants was called “pressing”. The punishment involved piling stones on top of the offender one at a time slowly suffocating him from the weight on his chest. Not only did this rid the kingdom of troublemakers but it had a ”crucify him” like effect on the gathered witnesses lest they forget who is in charge. Fast forward and today we are seeing Federal agency after agency pressing forward with new rules on hydraulic fracturing: DOI BLM Fracking Rule. **The Interior Department proposed new rules for hydraulic fracturing on lands controlled by the** Bureau of Land Management (**BLM**). (May 4th – 60 day comment period). **The proposed rules impose new well-bore integrity assurance requirements to verify that fluids used do not escape during fracturing operations. Public disclosure of chemicals used during hydraulic fracturing are required to be posted after fracturing operations is done. Oil and gas operators would also be required to have a water management plan for fracturing fluids that flow back to the surface.** EPA Safe Drinking Water Fracking Rule. US EPA proposed rules on diesel fuel use in hydraulic fracturing under the Safe Drinking Water Act covering both federal and private lands. (May 4th – 60 day comment period) EPA NSPS Rule. **US EPA Administrator** Lisa Jackson signed **final** New Source Performance Standards **(NSPS). Under this rule EPA will for the first time regulate air emissions from natural gas wells using hydraulic fracturing**. (April 17 – final NSPS rule at 40 C.F.R. Part 60, Subpart OOOO) EPA NESHAPs. National Emission Standards for Hazardous Air Pollutants (**NESHAPs) covers emission sources associated with exploration, production, processing, and transportation of oil and natural gas for upstream and midstream oil and gas industries**. (April 17 – Final Rule at 40 C.F.R. Subparts HH (covering the oil and natural gas production sector) and HHH (covering the natural gas transmission and storage). Interagency Rules Working Group. President **Obama** **issued an executive order** April 17th **creating an interagency working group to coordinate policy efforts among the federal agencies that oversee different components of the “development of unconventional domestic natural gas resources.”** My purpose here is not to review the details of each of these proposed rules. But **when the President creates a committee to choreograph the rule making process across Federal agencies you can be assured that “pressing” is about to begin.** Why? **To date hydraulic fracturing has been regulated largely by the states**. **This made sense since it was used in a few states where there was a growing body of experience with the players and techniques**. **State regulation has a vastly different character to it since there has generally been a much better balancing of interests between environmental and economic concerns in protecting the public interest.** So North Dakota, for example, can adopt rules and supervise field operations to protect public health and safety while also assuring that the state’s interest in economic growth is not harmed by irresponsible operators. **For more than twenty years this approach has worked without any significant environmental or other problems. Even US EPA Administrator** Lisa **Jackson was forced to admit there is very little evidence of environmental problems with fracking to warrant Federal intervention**. **That was music to the ears of the states, but it does not appear it will save them from a wave of new Federal regulation over fracking that almost surely will duplicate, preempt or interfere with the states.** On Federal lands the issue is different since much less drilling has been permitted. Federal rules on federal lands are more wrapped up in the politics environmental issues especially in an election year. So what should we make of this?

• Being FOR domestic energy production while being AGAINST it. The Obama Administration is trying to have it both ways in an election year. It must seem responsive to its environmental base that opposes hydraulic fracturing because it leads to more domestic energy production and use of fossil fuels. Yet it must seem responsive to labor and business interests and the public perception that domestic energy production of oil and gas is good for job creation, good for the economy and good for our national security.

• The Law of Creeping Federal Preemption. **The Federal Government is engaging in an age old turf war with the states using Federal rules to progressively lay the ground work for arguing that the Federal rules preempt state rules in conflict**. The rules proposed and adopted so far play this game with precision narrowly citing Federal statutory authority yet being generously flexible in their application and implementation to avoid raising too much fuss especially before the election. But **make no mistake this battle of Feds vs States is coming.**

• The Death of a Thousand Fracking Rules. **For operators,** investors**, and the rest of the oil and gas industry** just trying to do their jobs, make a living and do some good by developing America’s domestic energy potential, **new Federal rules are a mixed blessing**. On the one hand **the** uncertainty **about future rules imposes** enormous unquantifiable risk in a politically charged election year and beyond. On the other hand, **the piling on of Federal rules on top of state rules drives up the costs and can undermine the economics of many projects**. **The worst fear is that rulemaking will be used at the Federal level to achieve a policy outcome that likely cannot be won in Congress.**

The growth of domestic energy production from North America’s unconventional oil and gas potential is remaking our future and our economy. The decisions facing the country revolve around how to responsibly develop that potential for our economic revival and growth while balancing it against our broadly held desire to protect the environment for our children and grandchildren. Rules that clarify ambiguities and promote best practices are good for the industry and good for the country. **Rules that drive up the costs, delay operations, create conflict and confusion are, in fact, the modern version of “pressing”.**

### Plan

***The United States federal government should substantially reduce restrictions on natural gas production in the United States by repealing the Environmental Protection Agency’s New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews for natural gas production. The United States federal government should issue a moratorium on further federal restrictions on natural gas production in the United States.***

### Observation 2 is Coal

***US CO2 emissions are dropping rapidly as natural gas replaces coal --- but regulations will reverse this***

**Zakaria, 10-25** (Fareed, PhD Poli Sci @ Harvard, Zakaria, Editor of Newsweek, The Nation (AsiaNet), 2012, “The new oil and gas boom,” lexisnexis, ts)

**The environmental impact of the natural-gas boom is already clear and positive**. **The USA's *g*reen*h*ouse-*g*as emissions in 2011 were 9 percent lower than in 2007**. **That's a larger drop than in the *E*uropean *U*nion, with all its focus on renewables**. Why? A slow recovery and lagging demand is one answer. But **the main reason is that** **natural gas is replacing coal** everywhere as an energy source, **and gas emits half as much carbon dioxide as coal**. **This point is crucial**. **The conversation about** **natural gas cannot be had in isolation from the alternative. If we shut down all** **fracking and stop using shale gas, we will get all that energy by burning coal, which is the world's dirtiest fossil fuel and is associated with mining deaths and respiratory illnesses as well.**

***Restrictions will cause a price spike that shifts us back to coal***

**Brady ‘12**

Phil Brady, 6-6-12, the Opportune Time, Chesapeake: Turning Point or Point of No Return? <http://www.theopportunetime.com/news/online/Chesapeake-Turning-Point-or-Point-of-No-Return.php>, jj

**With the current price situation, there may be an opportunity for natural gas to replace coal** in the long term. **Not only does natural gas provide more energy than coal, but natural gas does so at significantly lower prices**. **As a matter of fact, we are already seeing the switch from coal to natural gas take place in power plants, and in entire states**. For example, Pennsylvania’s leading environmental advocacy organization, PennFuture, plans on replacing coal plants with natural gas plants. **However, keep in mind that power plants**, like Penn Future, **understand the cyclical nature of commodities.** **Consequently, *the plants will be prepared to have the retired coal-fired units ready to be used again when natural gas prices spike***. Interestingly, **if low costs are not enough to cause a price spike down the road, then perhaps new regulations on fracking will**. In April of 2012, the **U.S. Energy Secretary**, Steven **Chu, called for more stringent fracking regulations**. **If the legislation passes, we may see the now abundant supply of natural gas bottleneck, which would send prices back up**. If natural gas drillers simply slow down production, and sell natural gas to coal-users, they can shift the supply curve lower and increase demand, causing natural gas prices to increase and possibly reach levels seen in early 2008.

#### Coal is bad – It kills 13,000 people every year and biggest contributor to air pollution

Zelman 11 Joanna, The Huffington Post, "Power Plant Air Pollution Kills 13,000 People Per Year, Coal-Fired Are Most Hazardous: ALA Report", 3/15, www.huffingtonpost.com/2011/03/14/power-plant-air-pollution-coal-kills\_n\_833385.html

The American Lung Association (ALA) recently released a new report on the dramatic health hazards surrounding coal-fired power plants.¶ The report, “Toxic Air: The Case For Cleaning Up Coal-Fired Power Plants,” reveals the dangers of air pollution emitted by coal plants.¶ One of the starkest findings in the report claims, “Particle pollution from power plants is estimated to kill approximately 13,000 people a year.”¶ So what's the biggest culprit?¶ “Coal-fired power plants that sell electricity to the grid produce more hazardous air pollution in the U.S. than any other industrial pollution sources.” According to the report details, over 386,000 tons of air pollutants are emitted from over 400 plants in the U.S. per year. Interestingly, while most of the power plants are located in the Midwest and Southeast, the entire nation is threatened by their toxic emissions.¶ An ALA graph shows that while pollutants such as acid gases stay in the local area, metals such as lead and arsenic travel beyond state lines, and fine particulate matter has a global impact. In other words, while for some workers the pollution may be a tradeoff for employment at a plant, other regions don’t reap the same benefits, but still pay for the costs to their health.¶ The report connected specific pollutants with their health effects. According to the ALA, 76% of U.S. acid gas emissions, which are known to irritate breathing passages, come from coal-fired power plants. Out of all industrial sources, these plants are also the biggest emitter of airborne mercury, which can become part of the human food chain through fish and wildlife -- high mercury levels are linked to brain damage, birth defects, and damage to the nervous system. Overall, air pollutants from coal plants can cause heart attacks, strokes, lung cancer, birth defects, and premature death.¶ The American Lung Association isn’t the only group to connect coal plants with death and illness. A recent study released in the Annals of the New York Academy of Sciences found that, due in large part to health problems, coal costs the U.S. $500 billion per year. Specifically, the study found that the health costs of cancer, lung disease, and respiratory illnesses connected to pollutant emissions totaled over $185 billion per year.

#### Coal production disproportionately affects communities like Detroit

Wendland ‘11

Joel Wendland is editor of Political Affairs magazine. He is a union member and a US Army veteran.

7-20-11, People’s World, Coal pollution killing poor, people of color, NAACP charges <http://www.peoplesworld.org/coal-pollution-killing-poor-people-of-color-naacp-charges/>, jj

America is addicted to coal, and that addiction is killing poor people and people of color, according to a new report published by the NAACP and other environmental justice organizations. According to the report, emissions from 431 coal plants across the country cause 30,000 premature deaths and tens of thousands incidents of chronic respiratory health problems like asthma, bronchitis and lung cancer each year. According to the study, titled "Coal Blooded: Putting Profits Before People," Sulfur dioxide (SO2) and Nitrogen Oxide (NOx), coal plants produce nearly all of the SO2 and fine particle pollution in the U.S. Coal-powered plants produce about 44 percent of the electricity used in the U.S. Ten states use about half of the total amount of coal-fired electricity produced in the whole country. More than 8 million people live within three miles of a coal power plant, and those people are disproportionately poor or people of color. The average per capita income of those people total less than $19,000, substantially lower than the national average. About 3 million are people of color, the report found. The report also revealed the locations of the worst coal plants in the countries. These "failing plants" produce the most pollution and impact the largest number of poor and people of color. To be precise, 90 "failing plants" across the country produced a quarter of SO2 and one-fifth of NOx emissions in the entire country. More than half of the 4.7 million people who live near these plants are people of color. Of the 90 "failing plants," the report scrutinizes the 12 worst offenders. Three are owned by Edison International and are located in Illinois. PSEG owns two of the worst offenders in Connecticut and New Jersey. Duke Energy, DTE Energy, and Dominion are among the companies whose plants create the greatest harm. Detroit, Michigan is host to one of the worst pollution-producing plants in the country. The River Rouge Power Plant (DTE Energy), located on the southwest edge of the city produces more than 13,000 tons of SO2 and 4,658 tons of NOx each year. The plant is just five miles from downtown Detroit and just across the Rouge River from the only major Latino district in the city, known as "Mexican Town." Of the residents who live within three miles of the River Rouge plant, more than 65 percent are African Americans and Latinos. Average income for people living in the area is just over $13,000 each year. The study attributed 44 premature deaths and hundreds of asthma attacks each year to the pollution from just this one plant. Another deadly culprit is the Hammond, Indiana plant owned by Dominion. Located on outskirts of Chicago, this plant emits almost 17,000 tons of SO2 and NOx pollution. Of the people living within three miles of the plant, almost 80 percent are African Americans and Latinos. In that same corridor along the southern edge of Lake Michigan between Chicago and the Michigan border are six other coal-fired power plants that contribute to the poor health and premature deaths of mostly poor communities of color. The authors of the report called for immediately closing the 90 "failing plants." While they total about 20 percent of the coal-fired plants in the country, they produce less than 10 percent of its electricity. In addition, closing those plants would reduce the number of people living within three miles of a coal-fired plant by 58 percent and reduce the number of emergency room visits, deaths and chronic illnesses by thousands each year.

#### Coal’s is the worst contributor of global warming and the greatest threat to survival

**Hansen 9** - Director of Nasa's Goddard Institute for Space Studies [James Hansen (Professor of Earth and Environmental Sciences @ Columbia University and Ph.D. in Physics from the University of Iowa), “Coal-fired power stations are death factories. Close them,” The Observer, Sunday 15 February 2009, pg. http://www.guardian.co.uk/commentisfree/2009/feb/15/james-hansen-power-plants-coal]

A year ago, I wrote to Gordon Brown asking him to place a moratorium on new coal-fired power plants in Britain. I have asked the same of Angela Merkel, Barack Obama, Kevin Rudd and other leaders. The reason is this **- *coal is the single greatest threat to civilisation and all life on our planet***. **The climate is nearing tipping points**. Changes are beginning to appear and **there is a potential for explosive changes, effects that would be irreversible**, **if we do not rapidly slow fossil-fuel emissions over the next few decades**. **As Arctic sea ice melts, the darker ocean absorbs more sunlight and speeds melting. As the tundra melts, methane, a strong greenhouse gas, is released, causing more warming**. **As species are exterminated by shifting climate zones, ecosystems can collapse, destroying more species.** The public, buffeted by weather fluctuations and economic turmoil, has little time to analyse decadal changes. How can people be expected to evaluate and filter out advice emanating from those pushing special interests? How can people distinguish between top-notch science and pseudo-science? Those who lead us have no excuse - they are elected to guide, to protect the public and its best interests. They have at their disposal the best scientific organisations in the world, such as the Royal Society and the US National Academy of Sciences. Only in the past few years did the science crystallise, revealing the urgency. **Our planet is in peril. If we do not change course, we'll hand our children a situation that is out of their control. One ecological collapse will lead to another, in amplifying feedbacks.** The amount of carbon dioxide in the air has already risen to a dangerous level. The pre-industrial carbon dioxide amount was 280 parts per million (ppm). Humans, by burning coal, oil and gas, have increased this to 385 ppm; it continues to grow by about 2 ppm per year. Earth, with its four-kilometre-deep oceans, responds only slowly to changes of carbon dioxide. So the climate will continue to change, even if we make maximum effort to slow the growth of carbon dioxide. Arctic sea ice will melt away in the summer season within the next few decades. **Mountain glaciers, providing fresh water for rivers that supply hundreds of millions of people, will disappear - practically all of the glaciers could be gone within 50 years - if carbon dioxide continues to increase at current rates. Coral reefs, harbouring a quarter of ocean species, are threatened. The greatest danger hanging over our children and grandchildren is initiation of changes that will be irreversible on any time scale that humans can imagine. If coastal ice shelves buttressing the west Antarctic ice sheet continue to disintegrate, the sheet could disgorge into the ocean, raising sea levels by several metres in a century. Such rates of sea level change have occurred many times in Earth's history in response to global warming rates no higher than those of the past 30 years. Almost half of the world's great cities are located on coastlines. The most threatening change**, from my perspective**, is extermination of species**. **Several times in Earth's history, rapid global warming occurred**, apparently spurred by amplifying feedbacks**. In each case, more than half of plant and animal species became extinct. New species came into being over tens and hundreds of thousands of years. But these are time scales and generations that we cannot imagine. If we drive our fellow species to extinction, we will leave a far more desolate planet for our descendants than the world we inherited from our elders. Clearly, if we burn all fossil fuels, we will destroy the planet we know.** Carbon dioxide would increase to 500 ppm or more. We would set the planet on a course to the ice-free state, with sea level 75 metres higher. Climatic disasters would occur continually. The tragedy of the situation, if we do not wake up in time, is that the changes that must be made to stabilise the atmosphere and climate make sense for other reasons. They would produce a healthier atmosphere, improved agricultural productivity, clean water and an ocean providing fish that are safe to eat. Fossil-fuel reservoirs will dictate the actions needed to solve the problem. Oil, of which half the readily accessible reserves have already been burnt, is used in vehicles, so it's impractical to capture the carbon dioxide. This is likely to drive carbon dioxide levels to at least 400 ppm. But **if we cut off the largest source of carbon dioxide - coal - it will be practical to bring carbon dioxide back to 350 ppm,** lower still if we improve agricultural and forestry practices, increasing carbon storage in trees and soil. **Coal is not only the largest fossil fuel reservoir of carbon dioxide, it is the dirtiest fuel. Coal is polluting the world's oceans and streams with mercury, arsenic and other dangerous chemicals.** The dirtiest trick that governments play on their citizens is the pretence that they are working on "clean coal" or that they will build power plants that are "capture-ready" in case technology is ever developed to capture all pollutants.

#### Reducing emissions is the only way to prevent catastrophic warming tipping points

Nuccitelli 9-1

Dana Nuccitelli is an environmental scientist at a private environmental consulting firm in the Sacramento, California area. This piece was originally published at Skeptical Science and was reprinted with permission. “Realistically What Might The Future Climate Look Like?” ThinkProgress http://thinkprogress.org/climate/2012/09/01/784931/realistically-what-might-the-future-climate-look-like/

Clearly our CO2 emissions have not yet peaked – in fact they increased by 1 billion tonnes between 2010 and 2011 despite a continued global economic recession; therefore, the green curve is no longer an option. There has also been little progress toward an international climate accord to replace the Kyoto Protocol, which suggests that the blue curve does not represent a likely scenario either – in order to achieve peak emissions in 2015 we would have to take serious steps to reduce emissions today, which we are not. The red curve seems the most likely, but the required cuts are so steep that it is unlikely we will be able to achieve them, which means we are indeed likely to surpass the 2°C target. Thus it is worth exploring the question, what would a world with >2°C global surface warming look like? Global Warming Impacts The 2007 IPCC Fourth Assessment Report (AR4) summarizes the magnitudes of impact of various degrees of warming here, and graphically in Figure 2, relative to ~1990 temperatures (~0.6°C above late 19th Century temperatures). Some adverse impacts are expected even before we reach the 2°C limit, for example hundreds of millions of people being subjected to increased water stress, increasing drought at mid-latitudes (as we recently discussed here), increased coral bleaching, increased coastal damage from floods and storms, and increased morbidity and mortality from more frequent and intense heat waves (see here), floods, and droughts. However, by and large these are impacts which we should be able to adapt to, at a cost, but without disastrous consequences. Once we surpass the 2°C target, the impacts listed above are exacerbated, and some new impacts will occur. Most corals will bleach, and widespread coral mortality is expected ~3°C above late 19th Century temperatures. Up to 30% of global species will be at risk for extinction, and the figure could exceed 40% if we surpass 4°C, as we continue on the path toward the Earth’s sixth mass extinction. Coastal flooding will impact millions more people at ~2.5°C, and a number of adverse health effects are expected to continue rising along with temperatures. Reasons for Concern Smith et al. (2009) (on which the late great Stephen Schneider was a co-author) updated the IPCC impact assessment, arriving at similar conclusions. For example, “There is medium confidence that ~20–30% of known plant and animal species are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5 °C to 2.5 °C over 1980–1999″ “increases in drought, heat waves, and floods are projected in many regions and would have adverse impacts, including increased water stress, wildfire frequency, and flood risks (starting at less than 1 °C of additional warming above 1990 levels) and adverse health effects (slightly above 1 °C)” “climate change over the next century is likely to adversely affect hundreds of millions of people through increased coastal flooding after a further 2 °C warming from 1990 levels; reductions in water supplies (0.4 to 1.7 billion people affected with less than a 1 °C warming from 1990 levels); and increased health impacts (that are already being observed” Smith et al. updated the 2001 IPCC report ‘burning embers’ diagram to reflect their findings (Figure 3). On this figure, white regions indicate neutral or low impacts or risks, yellow indicates negative impacts for some systems or more significant risks, and red indicates substantial negative impacts or risks that are more widespread and/or severe. They have grouped the various climate change consequences into ‘reasons for concern’ (RFCs), summarized below. Figure 3: Risks from climate change, by reason for concern (RFC). Climate change consequences are plotted against increases in global mean temperature (°C) after 1990. Each column corresponds to a specific RFC and represents additional outcomes associated with increasing global mean temperature. The color scheme represents progressively increasing levels of risk and should not be interpreted as representing ‘‘dangerous anthropogenic interference,’’ which is a value judgment. The historical period 1900 to 2000 warmed by 0.6 °C and led to some impacts. It should be noted that this figure addresses only how risks change as global mean temperature increases, not how risks might change at different rates of warming. Furthermore, it does not address when impacts might be realized, nor does it account for the effects of different development pathways on vulnerability. Risk to Unique and Threatened Systems addresses the potential for increased damage to or irreversible loss of unique and threatened systems, such as coral reefs, tropical glaciers, endangered species, unique ecosystems, biodiversity hotspots, small island states, and indigenous communities. Risk of Extreme Weather Events tracks increases in extreme events with substantial consequences for societies and natural systems. Examples include increase in the frequency, intensity, or consequences of heat waves, floods, droughts, wildfires, or tropical cyclones. Distribution of Impacts concerns disparities of impacts. Some regions, countries, and populations face greater harm from climate change, whereas other regions, countries, or populations would be much less harmed—and some may benefit; the magnitude of harm can also vary within regions and across sectors and populations. Aggregate Damages covers comprehensive measures of impacts. Impacts distributed across the globe can be aggregated into a single metric, such as monetary damages, lives affected, or lives lost. Aggregation techniques vary in their treatment of equity of outcomes, as well as treatment of impacts that are not easily quantified. Risks of Large-Scale Discontinuities represents the likelihood that certain phenomena (sometimes called tipping points) would occur, any of which may be accompanied by very large impacts. These phenomena include the deglaciation (partial or complete) of the West Antarctic or Greenland ice sheets and major changes in some components of the Earth’s climate system, such as a substantial reduction or collapse of the North Atlantic Meridional Overturning Circulation. All of these reasons for concern enter the red (substantial negative impact, high risk) region by 4°C. Aggregate impacts are in the red region by 3°C, and some types of concerns are in the red region by 1°C. For more details we also recommend Mark Lynas’ book Six Degrees, which goes through the climate impacts from each subsequent degree of warming, based on a very thorough review of the scientific literature. A brief review of the book by Eric Steig and summary of some key impacts is available here. National Geographic also did a series of videos on the Six Degrees theme, which no longer seem to be available on their websites, but which can still be found on YouTube. This is Why Reducing Emissions is Critical We’re not yet committed to surpassing 2°C global warming, but as Watson noted, we are quickly running out of time to realistically give ourselves a chance to stay below that ‘danger limit’. However, 2°C is not a do-or-die threshold. Every bit of CO2 emissions we can reduce means that much avoided future warming, which means that much avoided climate change impacts. As Lonnie Thompson noted, the more global warming we manage to mitigate, the less adaption and suffering we will be forced to cope with in the future. Realistically, based on the current political climate (which we will explore in another post next week), limiting global warming to 2°C is probably the best we can do. However, there is a big difference between 2°C and 3°C, between 3°C and 4°C, and anything greater than 4°C can probably accurately be described as catastrophic, since various tipping points are expected to be triggered at this level. Right now, we are on track for the catastrophic consequences (widespread coral mortality, mass extinctions, hundreds of millions of people adversely impacted by droughts, floods, heat waves, etc.). But we’re not stuck on that track just yet, and we need to move ourselves as far off of it as possible by reducing our greenhouse gas emissions as soon and as much as possible. There are of course many people who believe that the planet will not warm as much, or that the impacts of the associated climate change will be as bad as the body of scientific evidence suggests. That is certainly a possiblity, and we very much hope that their optimistic view is correct. However, what we have presented here is the best summary of scientific evidence available, and it paints a very bleak picture if we fail to rapidly reduce our greenhouse gas emissions. If we continue forward on our current path, catastrophe is not just a possible outcome, it is the most probable outcome. And an intelligent risk management approach would involve taking steps to prevent a catastrophic scenario if it were a mere possibility, let alone the most probable outcome. This is especially true since the most important component of the solution – carbon pricing – can be implemented at a relatively low cost, and a far lower cost than trying to adapt to the climate change consequences we have discussed here (Figure 4).

#### Warming causes extinction

**Deibel ‘7** (Terry L. Deibel, professor of IR at National War College, Foreign Affairs Strategy, “Conclusion: American Foreign Affairs Strategy Today Anthropogenic – caused by CO2”)

Finally, **there is one major existential threat** to American security (as well as prosperity) of a nonviolent nature, which, though far in the future, demands urgent action. **It is the threat of global warming to the stability of the climate upon which all earthly life depends**. Scientists worldwide have been observing the gathering of this threat for three decades now, **and what was once a mere possibility has passed through probability to near certainty.** Indeed not one of more than 900 articles on climate change published in refereed scientific journals from 1993 to 2003 doubted that anthropogenic warming is occurring. “In legitimate scientific circles,” writes Elizabeth Kolbert, “it is virtually impossible to find evidence of disagreement over the fundamentals of global warming.” Evidence from a vast international scientific monitoring effort accumulates almost weekly, as this sample of newspaper reports shows: an international panel predicts “brutal droughts, floods and violent storms across the planet over the next century”; climate change could “literally alter ocean currents, wipe away huge portions of Alpine Snowcaps and aid the spread of cholera and malaria”; “glaciers in the Antarctic and in Greenland are melting much faster than expected, and…worldwide, plants are blooming several days earlier than a decade ago”; “rising sea temperatures have been accompanied by a significant global increase in the most destructive hurricanes”; “NASA scientists have concluded from direct temperature measurements that 2005 was the hottest year on record, with 1998 a close second”; “Earth’s warming climate is estimated to contribute to more than 150,000 deaths and 5 million illnesses each year” as disease spreads; “widespread bleaching from Texas to Trinidad…killed broad swaths of corals” due to a 2-degree rise in sea temperatures. “The world is slowly disintegrating,” concluded Inuit hunter Noah Metuq, who lives 30 miles from the Arctic Circle. “They call it climate change…but we just call it breaking up.” From the founding of the first cities some 6,000 years ago until the beginning of the industrial revolution, carbon dioxide levels in the atmosphere remained relatively constant at about 280 parts per million (ppm). At present they are accelerating toward 400 ppm, and by 2050 they will reach 500 ppm, about double pre-industrial levels. Unfortunately, atmospheric CO2 lasts about a century, so there is no way immediately to reduce levels, only to slow their increase, we are thus in for significant global warming; the only debate is how much and how serous the effects will be. As the newspaper stories quoted above show, we are already experiencing the effects of 1-2 degree warming in more violent storms, spread of disease, mass die offs of plants and animals, species extinction, and threatened inundation of low-lying countries like the Pacific nation of Kiribati and the Netherlands at a warming of 5 degrees or less the Greenland and West Antarctic ice sheets could disintegrate, leading to a sea level of rise of 20 feet that would cover North Carolina’s outer banks, swamp the southern third of Florida, and inundate Manhattan up to the middle of Greenwich Village. Another catastrophic effect would be the collapse of the Atlantic thermohaline circulation that keeps the winter weather in Europe far warmer than its latitude would otherwise allow. Economist William Cline once estimated the damage to the United States alone from moderate levels of warming at 1-6 percent of GDP annually; severe warming could cost 13-26 percent of GDP. But the most frightening scenario is runaway greenhouse warming, based on positive feedback from the buildup of water vapor in the atmosphere that is both caused by and causes hotter surface temperatures. Past ice age transitions, associated with only 5-10 degree changes in average global temperatures, took place in just decades, even though no one was then pouring ever-increasing amounts of carbon into the atmosphere. Faced with this specter, the best one can conclude is that **“humankind’s continuing enhancement of the natural greenhouse effect is akin to playing Russian roulette with the earth’s climate and humanity’s life support system**. At worst, says physics professor Marty Hoffert of New York University, “**we’re just going to burn everything up**; we’re going to het the atmosphere to the temperature it was in the Cretaceous when there were crocodiles at the poles, and then everything will collapse.” During the Cold War, astronomer Carl Sagan popularized a theory of nuclear winter to describe how a thermonuclear war between the Untied States and the Soviet Union would not only destroy both countries but possible end life on this planet. **Global warming is the post-Cold War era’s equivalent of nuclear winter at least as serious and considerably better supported scientifically.** Over the long run it puts dangers form terrorism and traditional military challenges to shame. **It is a threat** not only to the security and prosperity to the United States, but potentially to **the continued existence of life on this planet.**

#### Allowing warming to continue perpetuates racist inequalities

Hoerner 8**—**Former director of Research at the Center for a Sustainable Economy, Director of Tax Policy at the Center for Global Change at the University of Maryland College Park, and editor of Natural Resources Tax Review. He has done research on environmental economics and policy on behalf of the governments of Canada, France, Germany, the Netherlands, Switzerland, and the United States. Andrew received his B.A. in Economics from Cornell University and a J.D. from Case Western Reserve School of Law—AND—Nia Robins—former inaugural Climate Justice Corps Fellow in 2003, director of Environmental Justice and Climate Change Initiative (J. Andrew, “A Climate of Change African Americans, Global Warming, and a Just Climate Policy for the U.S.” July 2008, http://www.ejcc.org/climateofchange.pdf)

Everywhere we turn, the issues and impacts of climate change confront us. One of the most serious environmental threats facing the world today, climate change has moved from the minds of scientists and offices of environmentalists to the mainstream. Though the media is dominated by images of polar bears, melting glaciers, flooded lands, and arid desserts, there is a human face to this story as well. Climate change is not only an issue of the environment; it is also an issue of justice and human rights, one that dangerously intersects race and class. All over the world people of color, Indigenous Peoples and low-income communities bear disproportionate burdens from climate change itself, from ill-designed policies to prevent it, and from side effects of the energy systems that cause it. A Climate of Change explores the impacts of climate change on African Americans, from health to economics to community, and considers what policies would most harm or benefit African Americans—and the nation as a whole. African Americans are thirteen percent of the U.S. population and on average emit nearly twenty percent less greenhouse gases than non-Hispanic whites per capita. Though far less responsible for climate change, African Americans are significantly more vulnerable to its effects than non- Hispanic whites. Health, housing, economic well-being, culture, and social stability are harmed from such manifestations of climate change as storms, floods, and climate variability. African Americans are also more vulnerable to higher energy bills, unemployment, recessions caused by global energy price shocks, and a greater economic burden from military operations designed to protect the flow of oil to the U.S. Climate Justice: The Time Is Now Ultimately, accomplishing climate justice will require that new alliances are forged and traditional movements are transformed. An effective policy to address the challenges of global warming cannot be crafted until race and equity are part of the discussion from the outset and an integral part of the solution. This report finds that: Global warming amplifies nearly all existing inequalities. Under global warming, injustices that are already unsustainable become catastrophic. Thus it is essential to recognize that all justice is climate justice and that the struggle for racial and economic justice is an unavoidable part of the fight to halt global warming. Sound global warming policy is also economic and racial justice policy. Successfully adopting a sound global warming policy will do as much to strengthen the economies of low-income communities and communities of color as any other currently plausible stride toward economic justice. Climate policies that best serve African Americans also best serve a just and strong United States. This paper shows that policies well-designed to benefit African Americans also provide the most benefit to all people in the U.S. Climate policies that best serve African Americans and other disproportionately affected communities also best serve global economic and environmental justice. Domestic reductions in global warming pollution and support for such reductions in developing nations financed by polluter-pays principles provide the greatest benefit to African Americans, the peoples of Africa, and people across the Global South. A distinctive African American voice is critical for climate justice. Currently, legislation is being drafted, proposed, and considered without any significant input from the communities most affected. Special interests are represented by powerful lobbies, while traditional environmentalists often fail to engage people of color, Indigenous Peoples, and low-income communities until after the political playing field has been defined and limited to conventional environmental goals. A strong focus on equity is essential to the success of the environmental cause, but equity issues cannot be adequately addressed by isolating the voices of communities that are disproportionately impacted. Engagement in climate change policy must be moved from the White House and the halls of Congress to social circles, classrooms, kitchens, and congregations. The time is now for those disproportionately affected to assume leadership in the climate change debate, to speak truth to power, and to assert rights to social, environmental and economic justice. Taken together, these actions affirm a vital truth that will bring communities together: Climate Justice is Common Justice. African Americans and Vulnerability In this report, it is shown that African Americans are disproportionately affected by climate change. African Americans Are at Greater Risk from Climate Change and Global Warming Co-Pollutants ¶ • The six states with the highest African American population are all in the Atlantic hurricane zone, and are expected to experience more intense storms resembling Katrina and Rita in the future. ¶ • Global warming is expected to increase the frequency and intensity of heat waves or extreme heat events. African Americans suffer heat death at one hundred fifty to two hundred percent of the rate for non-Hispanic whites. ¶ • Seventy-one percent of African Americans live in counties in violation of federal air pollution standards, as compared to fifty-eight percent of the white population. Seventy-eight percent of African Americans live within thirty miles of a coal-fired power plant, as compared to fifty-six percent of non-Hispanic whites. ¶ • Asthma has strong associations with air pollution, and African Americans have a thirty-six percent higher rate of incidents of asthma than whites. Asthma is three times as likely to lead to emergency room visits or deaths for African Americans. ¶ • This study finds that a twenty-five percent reduction in greenhouse gases—similar to what passed in California and is proposed in major federal legislation—would reduce infant mortality by at least two percent, asthma by at least sixteen percent, and mortality from particulates by at least 6,000 to 12,000 deaths per year. Other estimates have run as high as 33,000 fewer deaths per year. A disproportionate number of the lives saved by these proposed reductions would be African American. African Americans Are Economically More Vulnerable to Disasters and Illnesses ¶ • In 2006, twenty percent of African Americans had no health insurance, including fourteen percent of African American children—nearly twice the rate of non-Hispanic whites. ¶ • In the absence of insurance, disasters and illness (which will increase with global warming) could be cushioned by income and accumulated wealth. However, the average income of African American households is fifty-seven percent that of non-Hispanic whites, and median wealth is only one-tenth that of non-Hispanic whites. ¶ • Racist stereotypes have been shown to reduce aid donations and impede service delivery to African Americans in the wake of hurricanes, floods, fires and other climate-related disasters as compared to non-Hispanic whites in similar circumstances. African Americans Are at Greater Risk from Energy Price Shocks ¶ • African Americans spend thirty percent more of their income on energy than non-Hispanic whites. • Energy price increases have contributed to seventy to eighty percent of recent recessions. The increase in unemployment of African Americans during energy caused recessions is twice that of non-Hispanic whites, costing the community an average of one percent of income every year. • Reducing economic dependence on energy will alleviate the frequency and severity of recessions and the economic disparities they generate. African Americans Pay a Heavy Price and a Disproportionate Share of the Cost of Wars for Oil • Oil company profits in excess of the normal rate of profit for U.S. industries cost the average household $611 in 2006 alone and are still rising. • The total cost of the war in Iraq borne by African Americans will be $29,000 per household if the resulting deficit is financed by tax increases, and $32,000 if the debt is repaid by spending cuts. This is more than three times the median assets of African American households. A Clean Energy Future Creates Far More Jobs for African Americans • Fossil fuel extraction industries employ a far lower proportion of African Americans on average compared to other industries. Conversely, renewable electricity generation employs three to five times as many people as comparable electricity generation from fossil fuels, a higher proportion of whom are African American. ¶ • Switching just one percent of total electricity generating capacity per year from conventional to renewable sources would result in an additional 61,000 to 84,000 jobs for African Americans by 2030. ¶ • A well-designed comprehensive climate plan achieving emission reductions comparable to the Kyoto Protocol would create over 430,000 jobs for African Americans by 2030, reducing the African American unemployment rate by 1.8 percentage points and raising the average African American income by 3 to 4 percent.

***There’s no comparison --- natural gas is far cleaner than coal – best scientific data***

**Lu et al. ‘12**

Xi Lu , School of Engineering and Applied Sciences, Harvard University, Cambridge, Massachusetts 02138, United States Jackson Salovaara , School of Engineering and Applied Sciences, Harvard University, Cambridge, Massachusetts 02138, United States Michael B. McElroy\* School of Engineering and Applied Sciences and Department of Earth and Planetary Sciences, Harvard University, Cambridge, Massachusetts 02138, United States

Implications of the Recent Reductions in Natural Gas Prices for Emissions of CO2 from the US Power Sector

Environmental Science & Technology201246 (5), 3014-3021, jj

Howarth et al.(24) have suggested that emissions of CH4 associated with the fracking process involved in the production of natural gas from shale, combined with release of CH4 in the gas transportation system, could largely offset the climate related advantages occasioned by the additional sources of low cost gas (CH4, the major component of natural gas, is a significantly more effective greenhouse gas than CO2). An earlier study by Lelieveld and Crutzen(25) quantitatively analyzing the indirect effects of methane on climate warming on the basis of available estimates of fossil-fuel-related leaks of methane, suggested that **switching from coal and oil to natural gas as an energy source would reduce climate warming.** They further concluded that considering the global warming potential (GWP) on a time scale of ten years, **the fractional natural gas leakage should be less than 4.3–5.7% to ensure a reduction in climate forcing associated with switching from coal to gas. The advantages of natural gas are even more favorable if the potential climate impact is assessed on time scales much longer than a decade**. **Jiang et al.(**26) **evaluated the** greenhouse gas (**GHG) emissions resulting from the use of gas extracted from the Marcellus shale considering the entire life cycle of the gas**. They offered a comparison with the average emissions resulting from US natural gas produced in 2008, prior to any significant development of the Marcellus system. Their results suggested that **the GHG emissions from shale gas over the entire life cycle including the final combustion process are at most 3% higher than emissions associated with production and consumption of conventional sources of gas**. They argued further, in contrast to Howarth et al.,(24) that **the climate impact of the greenhouse gases emitted in conjunction with exploitation of the Marcellus shale source to produce electricity are significantly lower than those associated with the production of power using coal**. They concluded that **relatively straightforward measures could be implemented to minimize the potential release of greenhouse gases associated with the extraction of gas from shale**.(26) A more recent study by Hultman et al.(27) adopting a transparent and consistent approach to comparing the GHG footprints of conventional natural gas, shale gas, and coal concluded that **in terms of electricity generation the GHG impacts of shale gas are 11% higher than those for conventional gas** (higher than the value reported by Jiang et al.) **but only 56% of the impact expected for coal.**

***Natural gas makes the transition to renewables effective***

**Frank et al ‘09**

Matthew Frank, Jenna Goodward, Sarah Ladislaw, and Kate Zyla, May 2009, CSIS, Crossing the Natural Gas Bridge, <http://csis.org/files/publication/090626_final_crossing_gas_bridge.pdf>, jj

Addressing climate change will require extensive changes in the ways that we produce, transport and use energy. **Given the scope, scale and complexity of the current energy system, the transition to a low carbon energy future will take time, significant investment and carefully crafted polices**. **During the transition, it is important for policymakers and the private sector to balance the need for aggressive action to reduce emissions with the need for reliable and affordable energy supplies**. **Natural gas can play a critical role in “building a bridge” to a secure, low-carbon energy system**. **It is the least carbon intensive fossil fuel** (burning gas emits less carbon dioxide than burning coal or oil), **and there are readily available supplies**, both within and outside of the United States. **New natural gas power generation facilities can be brought online quickly compared to other low-carbon sources such as nuclear power**. **They also enable more renewable energy by providing baseload power generation to complement the intermittent nature of renewables like wind and solar power**. There is already a great deal of existing infrastructure –from electric power plants and home furnaces to pipelines and ports – that is able to store, transport, and use natural gas.

### Observation 3: Method

#### First - We’re not pro-State, but we’re "anti-anti State". Some things can ONLY be solved "through the system" – and lifting existing State-exclusions on natural gas are such an issue:

Dr. Richard Barbrook, Hypermedia Research Centre – U. of Westminster, 6-5-1997, “More Provocations,” Amsterdam.nettime.org/Lists-Archives/nettime-1-9706/msg00034.html

I thought that this position is clear from my remarks about the ultra-left posturing of the ‘zero-work’ demand. In Europe, we have real social problems of deprivation and poverty which, in part, can only be solved by state action. This does not make me a statist, but rather anti-anti-statist. By opposing such intervention because they are carried out by the state anarchists are tacitly lining up with the neo-liberals. Even worse, refusing even to vote for the left, they acquiese to rule by neo-liberal parties. I deeply admire direct action movements. I was a radio pirate and we provide server space for anti-roads and environmental movements. However, this doesn’t mean that I support political abstentionism or, even worse, the mystical nonsense produced by Hakim Bey. It is great for artists and others to adopt a marginality as a life style choice, but most of the people who are economically and socially marginalised were never given any choice. They are excluded from society as a result of deliberate policies of deregulation, privatisation and welfare cutbacks carried out by neo-liberal governments. During the ‘70s. I was a pro-situ punk rocker until Thatcher got elected. Then we learnt the hard way that voting did change things and lots of people suffered if state power was withdrawn from certain areas of our life, such as welfare and employment. Anarchism can be a fun artistic pose. However, human suffering is not.

#### We defend USFG action because they are an inevitable and necessary agent to combat warming

Eckersley 4 Robyn, Reader/Associate Professor in the Department of Political Science at the University of Melbourne, “The Green State: Rethinking Democracy and Sovereignty”, MIT Press, 2004, Google Books, pp. 3-8

While acknowledging the basis for this antipathy toward the nation- state, and the limitations of state-centric analyses of global ecological degradation, I seek to draw attention to the positive role that states have played, and might increasingly play, in global and domestic politics. Writing more than twenty years ago, Hedley Bull (a proto-constructivist and leading writer in the English school) outlined the state's positive role in world affairs, and his arguments continue to provide a powerful challenge to those who somehow seek to "get beyond the state," as if such a move would provide a more lasting solution to the threat of armed conflict or nuclear war, social and economic injustice, or environmental degradation.10 As Bull argued, given that the state is here to stay whether we like it or not, then the call to get "beyond the state is a counsel of despair, at all events if it means that we have to begin by abolishing or subverting the state, rather than that there is a need to build upon it.""¶ In any event, rejecting the "statist frame" of world politics ought not prohibit an inquiry into the emancipatory potential of the state as a crucial "node" in any future network of global ecological governance. This is especially so, given that one can expect states to persist as major sites of social and political power for at least the foreseeable future and that any green transformations of the present political order will, short of revolution, necessarily be state-dependent. Thus, like it or not, those concerned about ecological destruction must contend with existing institutions and, where possible, seek to "rebuild the ship while still at sea." And if states are so implicated in ecological destruction, then an inquiry into the potential for their transformation even their modest reform into something that is at least more conducive to ecological sustainability would seem to be compelling.¶ Of course, it would be unhelpful to become singularly fixated on the redesign of the state at the expense of other institutions of governance. States are not the only institutions that limit, condition, shape, and direct political power, and it is necessary to keep in view the broader spectrum of formal and informal institutions of governance (e.g., local, national, regional, and international) that are implicated in global environmental change. Nonetheless, while the state constitutes only one modality of political power, it is an especially significant one because of its historical claims to exclusive rule over territory and peoples—as expressed in the principle of state sovereignty. As Gianfranco Poggi explains, the political power concentrated in the state "is a momentous, pervasive, critical phenomenon. Together with other forms of social power, it constitutes an indispensable medium for constructing and shaping larger social realities, for establishing, shaping and maintaining all broader and more durable collectivities."12 States play, in varying degrees, significant roles in structuring life chances, in distributing wealth, privilege, information, and risks, in upholding civil and political rights, and in securing private property rights and providing the legal/regulatory framework for capitalism. Every one of these dimensions of state activity has, for good or ill, a significant bearing on the global environmental crisis. Given that the green political project is one that demands far-reaching changes to both economies and societies, it is difficult to imagine how such changes might occur on the kind of scale that is needed without the active support of states. While it is often observed that states are too big to deal with local ecological problems and too small to deal with global ones, the state nonetheless holds, as Lennart Lundqvist puts it, "a unique position in the constitutive hierarchy from individuals through villages, regions and nations all the way to global organizations. The state is inclusive of lower political and administrative levels, and exclusive in speaking for its whole territory and population in relation to the outside world."13 In short, it seems to me inconceivable to advance ecological emancipation without also engaging with and seeking to transform state power.¶ Of course, not all states are democratic states, and the green movement has long been wary of the coercive powers that all states reputedly enjoy. Coercion (and not democracy) is also central to Max Weber's classic sociological understanding of the state as "a human community that (successfully) claims the monopoly of the legitimate use of physical force within a given territory."14 Weber believed that the state could not be defined sociologically in terms of its ends\* only formally as an organization in terms of the particular means that are peculiar to it.15 Moreover his concept of legitimacy was merely concerned with whether rules were accepted by subjects as valid (for whatever reason); he did not offer a normative theory as to the circumstances when particular rules ought to be accepted or whether beliefs about the validity of rules were justified. Legitimacy was a contingent fact, and in view of his understanding of politics as a struggle for power in the context of an increasingly disenchanted world, likely to become an increasingly unstable achievement.16¶ In contrast to Weber, my approach to the state is explicitly normative and explicitly concerned with the purpose of states, and the democratic basis of their legitimacy. It focuses on the limitations of liberal normative theories of the state (and associated ideals of a just constitutional arrangement), and it proposes instead an alternative green theory that seeks to redress the deficiencies in liberal theory. Nor is my account as bleak as Weber's. The fact that states possess a monopoly of control over the means of coercion is a most serious matter, but it does not necessarily imply that they must have frequent recourse to that power. In any event, whether the use of the state's coercive powers is to be deplored or welcomed turns on the purposes for which that power is exercised, the manner in which it is exercised, and whether it is managed in public, transparent, and accountable ways—a judgment that must be made against a background of changing problems, practices, and under- standings. The coercive arm of the state can be used to "bust" political demonstrations and invade privacy. It can also be used to prevent human rights abuses, curb the excesses of corporate power, and protect the environment.¶ In short, although the political autonomy of states is widely believed to be in decline, there are still few social institution that can match the same degree of capacity and potential legitimacy that states have to redirect societies and economies along more ecologically sustainable lines to address ecological problems such as global warming and pollution, the buildup of toxic and nuclear wastes and the rapid erosion of the earth's biodiversity. States—particularly when they act collectively—have the capacity to curb the socially and ecologically harmful consequences of capitalism. They are also more amenable to democratization than cor- porations, notwithstanding the ascendancy of the neoliberal state in the increasingly competitive global economy. There are therefore many good reasons why green political theorists need to think not only critically but also constructively about the state and the state system. While the state is certainly not "healthy" at the present historical juncture, in this book I nonetheless join Poggi by offering "a timid two cheers for the old beast," at least as a potentially more significant ally in the green cause.17

#### Role of the ballot’s to simulate enactment of the plan – only way to create effective change in energy policy

Hager 92 Carol J, Professor of political science at Bryn Mawr College, “Democratizing Technology: Citizen & State in West German Energy Politics, 1974-1990” Polity, Vol. 25, No. 1, p. 45-70

During this phase, the citizen initiative attempted to overcome its defensive posture and **implement an alternative politics.** The strategy of legal and technical challenge might delay or even prevent plant construction, but it would not by itself accomplish the broader goal on the legitimation dimension, i.e., democratization. Indeed, it worked against broad participation. The activists had to find a viable means of achieving change. Citizens had proved they could contribute to a **substantive policy discussion.** Now, some **activists turned to the parliamentary arena as a** possible **forum for** an **energy dialogue.** Until now, parliament had been conspicuously absent as a relevant policy maker, but if parliament could be reshaped and activated, citizens would have a forum in which to address the broad questions of policy-making goals and forms. They would also have an **institutional lever** with which to pry apart the bureaucracy and utility. None of the established political parties could offer an alternative program. Thus, local activists met to discuss forming their own voting list. These discussions provoked internal dissent. Many citizen initiative members objected to the idea of forming a political party. If the problem lay in the role of parliament itself, another political party would not solve it. On the contrary, parliamentary participation was likely to destroy what political innovations the extraparliamentary movement had made. Others argued that a political party would give the movement an institutional platform from which to introduce some of the grassroots democratic political forms the groups had developed. Founding a party as the parliamentary arm of the citizen movement would allow these groups to play an active, critical role in institutionalized politics, participating in the policy debates while retaining their outside perspective. Despite the disagreements, the Alternative List for Democracy and Environmental Protection Berlin (AL) was formed in 1978 and first won seats in the Land parliament with 7.2 percent of the vote in 1981.43 The founders of the AL were encouraged by the success of newly formed local green parties in Lower Saxony and Hamburg,44 whose evolution had been very similar to that of the West Berlin citizen move-ment. Throughout the FRG, unpopular administrative decisions affect-ing local environments, generally in the form of state-sponsored indus-trial projects, prompted the development of the citizen initiative and ecology movements. The groups in turn focused constant attention on state planning "errors," calling into question not only the decisions themselves, but also the conventional forms of political decision making that produced them.45 Disgruntled citizens increasingly aimed their critique at the established political parties, in particular the federal SPD/ FDP coalition, which seemed unable to cope with the economic, social, and political problems of the 1970s. Fanned by publications such as the Club of Rome's report, "The Limits to Growth," the view spread among activists that the crisis phenomena were not merely a passing phase, but indicated instead "a long-term structural crisis, whose cause lies in the industrial-technocratic growth society itself."46 As they broadened their critique to include the political system as a whole, many grassroots groups found the extraparliamentary arena too restrictive. Like many in the West Berlin group, they reasoned that the **necessary change would require a degree of political restructuring that could only be accomplished through their direct participation** **in parliamentary politics**. Green/alternative parties and voting lists sprang up nationwide and began to win seats in local assemblies. The West Berlin Alternative List saw itself not as a party, but as the parliamentary arm of the citizen initiative movement. One member explains: "the starting point for alternative electoral participation was simply the notion of achieving a greater audience for [our] own ideas and thus to work in support of the extraparliamentary movements and initia-tives,"47 including non-environmentally oriented groups. The AL wanted to avoid developing structures and functions autonomous from the citizen initiative movement. Members adhered to a list of principles, such as rotation and the imperative mandate, designed to keep parliamentarians attached to the grassroots. Although their insistence on grassroots democracy often resulted in interminable heated discussions, the participants recognized the importance of experimenting with new forms of decision making, of not succumbing to the same hierarchical forms they were challenging. Some argued that the proper role of citizen initiative groups was not to represent the public in government, but to mobilize other citizens to participate directly in politics themselves; self-determination was the aim of their activity.48 Once in parliament, the AL proposed establishmento f a temporary parliamentaryco mmissiont o studye nergyp olicy,w hichf or the first time would draw all concernedp articipantst ogetheri n a discussiono f both short-termc hoicesa nd long-termg oals of energyp olicy. With help from the SPD faction, which had been forced into the opposition by its defeat in the 1981 elections, two such commissions were created, one in 1982-83 and the other in 1984-85.49T hese commissionsg ave the citizen activists the forum they sought to push for modernizationa nd technicali nnovation in energy policy. Although it had scaled down the proposed new plant, the utility had produced no plan to upgrade its older, more polluting facilities or to install desulfurizationd evices. With proddingf rom the energyc ommission, Land and utility experts began to formulate such a plan, as did the citizen initiative. By exposing administrative failings in a public setting, and **by producing a** modernization **plan itself**, the combined citizen initiative and AL forced bureaucratic authorities to push the utility for improvements . They also forced the authorities to consider different technological solutions to West Berlin's energy and environmental problems. In this way, the activists served as technological innovators. In 1983, the first energy commission submitted a list of recommendations to the Land parliament which reflected the influence of the citizen protest movement. It emphasized goals of demand reduction and efficiency, noted the value of expanded citizen participation and urged authorities to "investigate more closely the positive role citizen participation can play in achieving policy goals."50 The second energy commission was created in 1984 to discuss the possibilities for modernization and shutdown of old plants and use of new, environmentally friendlier and cheaper technologies for electricity and heat generation. Its recommendations strengthened those of the first commission.51 Despite the non-binding nature of the commissions' recommendations, the public discussion of energy policy **motivated policy makers** to take stronger positions in favor of environmental protection. III. Conclusion The West Berlin energy project eventually cleared all planning hurdles, and construction began in the early 1980s. The new plant now conforms to the increasingly stringent environmental protection requirements of the law. The project was delayed, scaled down from 1200 to 600 MW, moved to a neutral location and, unlike other BEWAG plants, equipped with modern desulfurization devices. That the new plant, which opened in winter 1988-89, is the technologically most advanced and environmen-tally sound of BEWAG's plants is due entirely to the long legal battle with the citizen initiative group, during which nearly every aspect of the original plans was changed. In addition, through the efforts of the Alter-native List (AL) in parliament, the Land government and BEWAG formulated a long sought modernization and environmental protection plan for all of the city's plants. The AL prompted the other parliamentary parties to take pollution control seriously. Throughout the FRG, energy politics evolved in a similar fashion. As Habermas claimed, underlying the objections against particular projects was a reaction against the administrative-economic system in general. One author, for example, describes the emergence of two-dimensional protest against nuclear energy: The resistance against a concrete project became understood simul-taneously as resistance against the entire atomic program. Questions of energy planning, of economic growth, of understanding of democracy entered the picture. . . . Besides concern for human health, for security of conditions for human existence and protec-tion of nature arose critique of what was perceived as undemocratic planning, the "shock" of the delayed public announcement of pro-ject plans and the fear of political decision errors that would aggra-vate the problem.52 This passage supports a West Berliner's statement that the citizen initiative began with a project critique and arrived at Systemkritik.53 I have labeled these two aspects of the problem the public policy and legitima-tion dimensions. In the course of these conflicts, the legitimation dimen-sion emergd as the more important and in many ways the more prob-lematic. Parliamentary Politics In the 1970s, energy politics began to develop in the direction Offe de-scribed, with bureaucrats and protesters avoiding the parliamentary channels through which they should interact. The citizen groups them-selves, however, have to a degree reversed the slide into irrelevance of parliamentary politics. Grassroots groups overcame their defensive posture enough to begin to formulate an alternative politics, based upon concepts such as decision making through mutual understanding rather than technical criteria or bargaining. This new politics required new modes of interaction which the old corporatist or pluralist forms could not provide. Through the formation of green/alternative parties and voting lists and through new parliamentary commissions such as the two described in the case study, some members of grassroots groups attempted to **both operate within the political system and fundamentally change it,** to restore the link between bureaucracy and citizenry. Parliamentary politics was partially revived in the eyes of West German grassroots groups as a legitimate realm of citizen participation, an outcome the theory would not predict. It is not clear, however, that strengthening the parliamentary system would be a desirable outcome for everyone. Many remain skeptical that institutions that operate as part of the "system" can offer the kind of substantive participation that grass-roots groups want. The constant tension between institutionalized politics and grassroots action emerged clearly in the recent internal debate between "fundamentalist" and "realist" wings of the Greens. Fundis wanted to keep a firm footing outside the realm of institutionalized politics. They refused to bargain with the more established parties or to join coalition governments. Realos favored participating in institutionalized politics while pressing their grassroots agenda. Only this way, they claimed, would they have a chance to implement at least some parts of their program. This internal debate, which has never been resolved, can be interpreted in different ways. On one hand, the tension limits the appeal of green and alternative parties to the broader public, as the Greens' poor showing in the December 1990 all-German elections attests. The failure to come to agreement on basic issues can be viewed as a hazard of grass-roots democracy. The Greens, like the West Berlin citizen initiative, are opposed in principle to forcing one faction to give way to another. Disunity thus persists within the group. On the other hand, the tension can be understood not as a failure, but as a kind of success: grassroots politics **has not been absorbed into the bureaucratized system;** it retains its critical dimension, both in relation to the political system and within the groups themselves. The lively debate stimulated by grassroots groups and parties keeps questions of democracy on the public agenda. Technical Debate In West Berlin, **the two-dimensionality of the energy issue forced citizen activists to become both participants in and critics of the policy process**. In order to defeat the plant, **activists engaged in technical debate.** They won several decisions in favor of environmental protection, often **proving to be more informed than bureaucratic experts** themselves. The case study demonstrates that grassroots groups, far from impeding techno-logical advancement, can actually serve as technological innovators. The activists' role as technical experts, while it helped them achieve some success on the policy dimension, had mixed results on the legitimation dimension. On one hand, it helped them to challenge the legitimacy of technocratic policy making. They turned back the Land government's attempts to displace political problems by formulating them in technical terms.54 By demonstrating the fallibility of the technical arguments, activists forced authorities to acknowledge that energy demand was a political variable, whose value at any one point was as much influenced by the choices of policy makers as by independent technical criteria. Submission to the form and language of technical debate, however, weakened activists' attempts to introduce an alternative, goal-oriented form of decision making into the political system. Those wishing to par-ticipate in energy politics on a long-term basis have had to accede to the language of bureaucratic discussion, if not the legitimacy of bureaucratic authorities. They have helped break down bureaucratic authority but have not yet offered a viable long-term alternative to bureaucracy. In the tension between form and language, goals and procedure, the legitima-tion issue persists. At the very least, however, **grassroots action challenges critical theory's notion that technical discussion is inimical to democratic politics**.55 Citizen groups have raised the possibility of a dialogue that is both technically sophisticated and democratic. In sum, although the legitimation problems which gave rise to grass-roots protest have not been resolved, citizen action has worked to counter the marginalization of parliamentary politics and the technocratic character of policy debate that Offe and Habermas identify. The West Berlin case suggests that the solutions to current legitimation problems may not require total repudiation of those things previously associated with technocracy.56 In Berlin, the citizen initiative and AL continue to search for new, more legitimate forms of organization consistent with their principles. No permanent Land parliamentary body exists to coordinate and con-solidate energy policy making.57 In the 1989 Land elections, the CDU/ FDP coalition was defeated, and the AL formed a governing coalition with the SPD. In late 1990, however, the AL withdrew from the coali-tion. It remains to be seen whether the AL will remain an effective vehi-cle for grassroots concerns, and whether the citizenry itself, now includ-ing the former East Berliners, will remain active enough to give the AL direction as united Berlin faces the formidable challenges of the 1990s. On the policy dimension, grassroots groups achieved some success. On the legitimation dimension, it is difficult to judge the results of grass-roots activism by normal standards of efficacy or success. Activists have certainly not radically restructured politics. They agree that democracy is desirable, but troublesome questions persist about the degree to which those processes that are now bureaucratically organized can and should be restructured, where grassroots democracy is possible and where bureaucracy is necessary in order to get things done. In other words, grassroots groups have tried to remedy the Weberian problem of the marginalization of politics, but it is not yet clear what the boundaries of the political realm should be. It is, however, the act of calling existing boundaries into question that keeps democracy vital. In raising alternative possibilities and encouraging citizens to take an active, critical role in their own governance, the contribution of grassroots environmental groups has been significant. As Melucci states for new social movements in general, these groups mount a "symbolic" challenge by proposing "a different way of perceiving and naming the world."58 Rochon concurs for the case of the West German peace movement, noting that its effect on the public discussion of secur-ity issues has been tremendous.59 The effects of the legitimation issue in the FRG are evident in increased citizen interest in areas formerly left to technical experts. Citizens have formed nationwide associations of environmental and other grassroots groups as well as alternative and green parties at all levels of government. The level of information within the groups is generally quite high, and their participation, especially in local politics, has raised the awareness and engagement of the general populace noticeably.60 Policy concessions and new legal provisions for citizen participation have not quelled grassroots action**.** The **attempts of** the **established** political **parties to coopt "green" issues have** also **met with limited success.** Even green parties themselves have not tapped the full potential of public support for these issues. The persistence of legitima-tion concerns, along with the growth of a culture of informed political activism, will ensure that the search continues for a space for a delibera-tive politics in modern technological society.61

#### Public advocacy of climate solutions key to change governmental policy---individual change insufficient

CAG 10—Climate Change Communication Advisory Group. Dr Adam Corner School of Psychology, Cardiff University - Dr Tom Crompton Change Strategist, WWF-UK - Scott Davidson Programme Manager, Global Action Plan - Richard Hawkins Senior Researcher, Public Interest Research Centre - Professor Tim Kasser, Psychology department, Knox College, Galesburg, Illinois, USA. - Dr Renee Lertzman, Center for Sustainable Processes & Practices, Portland State University, US. - Peter Lipman, Policy Director, Sustrans. - Dr Irene Lorenzoni, Centre for Environmental Risk, University of East Anglia. - George Marshall, Founding Director, Climate Outreach , Information Network - Dr Ciaran Mundy, Director, Transition Bristol - Dr Saffron O’Neil, Department of Resource Management and Geography, University of Melbourne, Australia. - Professor Nick Pidgeon, Director, Understanding Risk Research Group, School of Psychology, Cardiff University. - Dr Anna Rabinovich, School of Psychology, University of Exeter - Rosemary Randall, Founder and director of Cambridge Carbon Footprint - Dr Lorraine Whitmarsh, School of Psychology, Cardiff University & Visiting Fellow at the, Tyndall Centre for Climate Change Research. (Communicating climate change to mass public audience, http://pirc.info/downloads/communicating\_climate\_mass\_audiences.pdf)

This short advisory paper collates a set of recommendations about how best to shape mass public communications aimed at increasing concern about climate change and motivating commensurate behavioural changes.¶ Its focus is not upon motivating small private-sphere behavioural changes on a piece-meal basis. Rather, it marshals evidence about how best to motivate the ambitious and systemic behavioural change that is necessary – including, crucially, greater public engagement with the policy process (through, for example, lobbying decision-makers and elected representatives, or participating in demonstrations), as well as major lifestyle changes. ¶ Political leaders themselves have drawn attention to the imperative for more vocal public pressure to create the ‘political space’ for them to enact more ambitious policy interventions. 1 While this paper does not dismiss the value of individuals making small private-sphere behavioural changes (for example, adopting simple domestic energy efficiency measures) it is clear that such behaviours do not, in themselves, represent a proportional response to the challenge of climate change. As David MacKay, Chief Scientific Advisor to the UK Department of Energy and Climate change writes: “Don’t be distracted by the myth that ‘every little helps’. If everyone does a little, we’ll achieve only a little” (MacKay, 2008).¶ The task of campaigners and communicators from government, business and non-governmental organisations must therefore be to motivate both (i) widespread adoption of ambitious private-sphere behavioural changes; and (ii) widespread acceptance of – and indeed active demand for – ambitious new policy interventions.¶ Current public communication campaigns, as orchestrated by government, business and non-governmental organisations, are not achieving these changes. This paper asks: how should such communications be designed if they are to have optimal impact in motivating these changes? The response to this question will require fundamental changes in the ways that many climate change communication campaigns are currently devised and implemented. ¶ This advisory paper offers a list of principles that could be used to enhance the quality of communication around climate change communications. The authors are each engaged in continuously sifting the evidence from a range of sub-disciplines within psychology, and reflecting on the implications of this for improving climate change communications. Some of the organisations that we represent have themselves at times adopted approaches which we have both learnt from and critique in this paper – so some of us have first hand experience of the need for on-going improvement in the strategies that we deploy. ¶ The changes we advocate will be challenging to enact – and will require vision and leadership on the part of the organisations adopting them. But without such vision and leadership, we do not believe that public communication campaigns on climate change will create the necessary behavioural changes – indeed, there is a profound risk that many of today’s campaigns will actually prove counter-productive. ¶ Seven Principles¶ 1. Move Beyond Social Marketing¶ We believe that too little attention is paid to the understanding that psychologists bring to strategies for motivating change, whilst undue faith is often placed in the application of marketing strategies to ‘sell’ behavioural changes. Unfortunately, in the context of ambitious pro-environmental behaviour, such strategies seem unlikely to motivate systemic behavioural change.¶ Social marketing is an effective way of achieving a particular behavioural goal – dozens of practical examples in the field of health behaviour attest to this. Social marketing is really more of a framework for designing behaviour change programmes than a behaviour change programme - it offers a method of maximising the success of a specific behavioural goal. Darnton (2008) has described social marketing as ‘explicitly transtheoretical’, while Hastings (2007), in a recent overview of social marketing, claimed that there is no theory of social marketing. Rather, it is a ‘what works’ philosophy, based on previous experience of similar campaigns and programmes. Social marketing is flexible enough to be applied to a range of different social domains, and this is undoubtedly a fundamental part of its appeal.¶ However, social marketing’s 'what works' status also means that it is agnostic about the longer term, theoretical merits of different behaviour change strategies, or the cultural values that specific campaigns serve to strengthen. Social marketing dictates that the most effective strategy should be chosen, where effective means ‘most likely to achieve an immediate behavioural goal’. ¶ This means that elements of a behaviour change strategy designed according to the principles of social marketing may conflict with other, broader goals. What if the most effective way of promoting pro-environmental behaviour ‘A’ was to pursue a strategy that was detrimental to the achievement of long term pro-environmental strategy ‘Z’? The principles of social marketing have no capacity to resolve this conflict – they are limited to maximising the success of the immediate behavioural programme. This is not a flaw of social marketing – it was designed to provide tools to address specific behavioural problems on a piecemeal basis. But it is an important limitation, and one that has significant implications if social marketing techniques are used to promote systemic behavioural change and public engagement on an issue like climate change. ¶ 2. Be honest and forthright about the probable impacts of climate change, and the scale of the challenge we confront in avoiding these. But avoid deliberate attempts to provoke fear or guilt. ¶ There is no merit in ‘dumbing down’ the scientific evidence that the impacts of climate change are likely to be severe, and that some of these impacts are now almost certainly unavoidable. Accepting the impacts of climate change will be an important stage in motivating behavioural responses aimed at mitigating the problem. However, deliberate attempts to instil fear or guilt carry considerable risk. ¶ Studies on fear appeals confirm the potential for fear to change attitudes or verbal expressions of concern, but often not actions or behaviour (Ruiter et al., 2001). The impact of fear appeals is context - and audience - specific; for example, for those who do not yet realise the potentially ‘scary’ aspects of climate change, people need to first experience themselves as vulnerable to the risks in some way in order to feel moved or affected (Das et al, 2003; Hoog et al, 2005). As people move towards contemplating action, fear appeals can help form a behavioural intent, providing an impetus or spark to ‘move’ from; however such appeals must be coupled with constructive information and support to reduce the sense of danger (Moser, 2007). The danger is that fear can also be disempowering – producing feelings of helplessness, remoteness and lack of control (O’Neill and Nicholson-Cole, 2009). Fear is likely to trigger ‘barriers to engagement’, such as denial2 (Stoll-Kleemann et al., 2001; Weber, 2006; Moser and Dilling, 2007; Lorenzoni, Nicholson-Cole & Whitmarsh, 2007). The location of fear in a message is also relevant; it works better when placed first for those who are inclined to follow the advice, but better second for those who aren't (Bier, 2001).¶ Similarly, studies have shown that guilt can play a role in motivating people to take action but can also function to stimulate defensive mechanisms against the perceived threat or challenge to one’s sense of identity (as a good, moral person). In the latter case, behaviours may be left untouched (whether driving a SUV or taking a flight) as one defends against any feelings of guilt or complicity through deployment of a range of justifications for the behaviour (Ferguson & Branscombe, 2010). ¶ Overall, there is a need for emotionally balanced representations of the issues at hand. This will involve acknowledging the ‘affective reality’ of the situation, e.g. “We know this is scary and overwhelming, but many of us feel this way and we are doing something about it”.¶ 3. Be honest and forthright about the impacts of mitigating and adapting to climate change for current lifestyles, and the ‘loss’ - as well as the benefits - that these will entail. Narratives that focus exclusively on the ‘up-side’ of climate solutions are likely to be unconvincing. While narratives about the future impacts of climate change may highlight the loss of much that we currently hold to be dear, narratives about climate solutions frequently ignore the question of loss. If the two are not addressed concurrently, fear of loss may be ‘split off’ and projected into the future, where it is all too easily denied. This can be dangerous, because accepting loss is an important step towards working through the associated emotions, and emerging with the energy and creativity to respond positively to the new situation (Randall, 2009). However, there are plenty of benefits (besides the financial ones) of a low-carbon lifestyle e.g., health, community/social interaction - including the ‘intrinsic' goals mentioned below. It is important to be honest about both the losses and the benefits that may be associated with lifestyle change, and not to seek to separate out one from the other.¶ 3a. Avoid emphasis upon painless, easy steps. ¶ Be honest about the limitations of voluntary private-sphere behavioural change, and the need for ambitious new policy interventions that incentivise such changes, or that regulate for them. People know that the scope they have, as individuals, to help meet the challenge of climate change is extremely limited. For many people, it is perfectly sensible to continue to adopt high-carbon lifestyle choices whilst simultaneously being supportive of government interventions that would make these choices more difficult for everyone. ¶ The adoption of small-scale private sphere behavioural changes is sometimes assumed to lead people to adopt ever more difficult (and potentially significant) behavioural changes. The empirical evidence for this ‘foot-in-thedoor’ effect is highly equivocal. Some studies detect such an effect; others studies have found the reverse effect (whereby people tend to ‘rest on their laurels’ having adopted a few simple behavioural changes - Thogersen and Crompton, 2009). Where attention is drawn to simple and painless privatesphere behavioural changes, these should be urged in pursuit of a set of intrinsic goals (that is, as a response to people’s understanding about the contribution that such behavioural change may make to benefiting their friends and family, their community, the wider world, or in contributing to their growth and development as individuals) rather than as a means to achieve social status or greater financial success. Adopting behaviour in pursuit of intrinsic goals is more likely to lead to ‘spillover’ into other sustainable behaviours (De Young, 2000; Thogersen and Crompton, 2009).¶ People aren’t stupid: they know that if there are wholesale changes in the global climate underway, these will not be reversed merely through checking their tyre pressures or switching their TV off standby. An emphasis upon simple and painless steps suppresses debate about those necessary responses that are less palatable – that will cost people money, or that will infringe on cherished freedoms (such as to fly). Recognising this will be a key step in accepting the reality of loss of aspects of our current lifestyles, and in beginning to work through the powerful emotions that this will engender (Randall, 2009). ¶ 3b. Avoid over-emphasis on the economic opportunities that mitigating, and adapting to, climate change may provide. ¶ There will, undoubtedly, be economic benefits to be accrued through investment in new technologies, but there will also be instances where the economic imperative and the climate change adaptation or mitigation imperative diverge, and periods of economic uncertainty for many people as some sectors contract. It seems inevitable that some interventions will have negative economic impacts (Stern, 2007).¶ Undue emphasis upon economic imperatives serves to reinforce the dominance, in society, of a set of extrinsic goals (focussed, for example, on financial benefit). A large body of empirical research demonstrates that these extrinsic goals are antagonistic to the emergence of pro-social and proenvironmental concern (Crompton and Kasser, 2009).¶ 3c. Avoid emphasis upon the opportunities of ‘green consumerism’ as a response to climate change.¶ As mentioned above (3b), a large body of research points to the antagonism between goals directed towards the acquisition of material objects and the emergence of pro-environmental and pro-social concern (Crompton and Kasser, 2009). Campaigns to ‘buy green’ may be effective in driving up sales of particular products, but in conveying the impression that climate change can be addressed by ‘buying the right things’, they risk undermining more difficult and systemic changes. A recent study found that people in an experiment who purchased ‘green’ products acted less altruistically on subsequent tasks (Mazar & Zhong, 2010) – suggesting that small ethical acts may act as a ‘moral offset’ and licence undesirable behaviours in other domains. This does not mean that private-sphere behaviour changes will always lead to a reduction in subsequent pro-environmental behaviour, but it does suggest that the reasons used to motivate these changes are critically important. Better is to emphasise that ‘every little helps a little’ – but that these changes are only the beginning of a process that must also incorporate more ambitious private-sphere change and significant collective action at a political level.¶ 4. Empathise with the emotional responses that will be engendered by a forthright presentation of the probable impacts of climate change. ¶ Belief in climate change and support for low-carbon policies will remain fragile unless people are emotionally engaged. We should expect people to be sad or angry, to feel guilt or shame, to yearn for that which is lost or to search for more comforting answers (Randall, 2009). Providing support and empathy in working through the painful emotions of 'grief' for a society that must undergo changes is a prerequisite for subsequent adaptation to new circumstances.¶ Without such support and empathy, it is more likely that people will begin to deploy a range of maladaptive ‘coping strategies’, such as denial of personal responsibility, blaming others, or becoming apathetic (Lertzman, 2008). An audience should not be admonished for deploying such strategies – this would in itself be threatening, and could therefore harden resistance to positive behaviour change (Miller and Rolnick, 2002). The key is not to dismiss people who exhibit maladaptive coping strategies, but to understand how they can be made more adaptive. People who feel socially supported will be more likely to adopt adaptive emotional responses - so facilitating social support for proenvironmental behaviour is crucial.¶ 5. Promote pro-environmental social norms and harness the power of social networks¶ One way of bridging the gap between private-sphere behaviour changes and collective action is the promotion of pro-environmental social norms. Pictures and videos of ordinary people (‘like me’) engaging in significant proenvironmental actions are a simple and effective way of generating a sense of social normality around pro-environmental behaviour (Schultz, Nolan, Cialdini, Goldstein and Griskevicius, 2007). There are different reasons that people adopt social norms, and encouraging people to adopt a positive norm simply to ‘conform’, to avoid a feeling of guilt, or for fear of not ‘fitting in’ is likely to produce a relatively shallow level of motivation for behaviour change. Where social norms can be combined with ‘intrinsic’ motivations (e.g. a sense of social belonging), they are likely to be more effective and persistent.¶ Too often, environmental communications are directed to the individual as a single unit in the larger social system of consumption and political engagement. This can make the problems feel too overwhelming, and evoke unmanageable levels of anxiety. Through the enhanced awareness of what other people are doing, a strong sense of collective purpose can be engendered. One factor that is likely to influence whether adaptive or maladaptive coping strategies are selected in response to fear about climate change is whether people feel supported by a social network – that is, whether a sense of ‘sustainable citizenship’ is fostered. The efficacy of groupbased programmes at promoting pro-environmental behaviour change has been demonstrated on numerous occasions – and participants in these projects consistently point to a sense of mutual learning and support as a key reason for making and maintaining changes in behaviour (Nye and Burgess, 2008). There are few influences more powerful than an individual’s social network. Networks are instrumental not just in terms of providing social support, but also by creating specific content of social identity – defining what it means to be “us”. If environmental norms are incorporated at this level (become defining for the group) they can result in significant behavioural change (also reinforced through peer pressure).¶ Of course, for the majority of people, this is unlikely to be a network that has climate change at its core. But social networks – Trade Unions, Rugby Clubs, Mother & Toddler groups – still perform a critical role in spreading change through society. Encouraging and supporting pre-existing social networks to take ownership of climate change (rather than approach it as a problem for ‘green groups’) is a critical task. As well as representing a crucial bridge between individuals and broader society, peer-to-peer learning circumnavigates many of the problems associated with more ‘top down’ models of communication – not least that government representatives are perceived as untrustworthy (Poortinga & Pidgeon, 2003). Peer-to-peer learning is more easily achieved in group-based dialogue than in designing public information films: But public information films can nonetheless help to establish social norms around community-based responses to the challenges of climate change, through clear visual portrayals of people engaging collectively in the pro-environmental behaviour.¶ The discourse should be shifted increasingly from ‘you’ to ‘we’ and from ‘I’ to ‘us’. This is starting to take place in emerging forms of community-based activism, such as the Transition Movement and Cambridge Carbon Footprint’s ‘Carbon Conversations’ model – both of which recognize the power of groups to help support and maintain lifestyle and identity changes. A nationwide climate change engagement project using a group-based behaviour change model with members of Trade Union networks is currently underway, led by the Climate Outreach and Information Network. These projects represent a method of climate change communication and engagement radically different to that typically pursued by the government – and may offer a set of approaches that can go beyond the limited reach of social marketing techniques.¶ One potential risk with appeals based on social norms is that they often contain a hidden message. So, for example, a campaign that focuses on the fact that too many people take internal flights actually contains two messages – that taking internal flights is bad for the environment, and that lots of people are taking internal flights. This second message can give those who do not currently engage in that behaviour a perverse incentive to do so, and campaigns to promote behaviour change should be very careful to avoid this. The key is to ensure that information about what is happening (termed descriptive norms), does not overshadow information about what should be happening (termed injunctive norms). ¶ 6. Think about the language you use, but don’t rely on language alone¶ A number of recent publications have highlighted the results of focus group research and talk-back tests in order to ‘get the language right’ (Topos Partnership, 2009; Western Strategies & Lake Research Partners, 2009), culminating in a series of suggestions for framing climate-change communications. For example, these two studies led to the suggestions that communicators should use the term ‘global warming’ or ‘our deteriorating atmosphere’, respectively, rather than ‘climate change’. Other research has identified systematic differences in the way that people interpret the terms ‘climate change’ and ‘global warming’, with ‘global warming’ perceived as more emotionally engaging than ‘climate change’ (Whitmarsh, 2009).¶ Whilst ‘getting the language right’ is important, it can only play a small part in a communication strategy. More important than the language deployed (i.e. ‘conceptual frames') are what have been referred to by some cognitive linguists as 'deep frames'. Conceptual framing refers to catchy slogans and clever spin (which may or may not be honest). At a deeper level, framing refers to forging the connections between a debate or public policy and a set of deeper values or principles. Conceptual framing (crafting particular messages focussing on particular issues) cannot work unless these messages resonate with a set of long-term deep frames.¶ Policy proposals which may at the surface level seem similar (perhaps they both set out to achieve a reduction in environmental pollution) may differ importantly in terms of their deep framing. For example, putting a financial value on an endangered species, and building an economic case for their conservation ‘commodifies’ them, and makes them equivalent (at the level of deep frames) to other assets of the same value (a hotel chain, perhaps). This is a very different frame to one that attempts to achieve the same conservation goals through the ascription of intrinsic value to such species – as something that should be protected in its own right. Embedding particular deep frames requires concerted effort (Lakoff, 2009), but is the beginning of a process that can build a broad, coherent cross-departmental response to climate change from government.¶ 7. Encourage public demonstrations of frustration at the limited pace of government action¶ Private-sphere behavioural change is not enough, and may even at times become a diversion from the more important process of bringing political pressure to bear on policy-makers. The importance of public demonstrations of frustration at both the lack of political progress on climate change and the barriers presented by vested interests is widely recognised – including by government itself. Climate change communications, including government communication campaigns, should work to normalise public displays of frustration with the slow pace of political change. Ockwell et al (2009) argued that communications can play a role in fostering demand for - as well as acceptance of - policy change. Climate change communication could (and should) be used to encourage people to demonstrate (for example through public demonstrations) about how they would like structural barriers to behavioural/societal change to be removed.

#### Policy debate teaches students to access the language of experts – These is necessary to prevent the cession of science and policy to the ideological elites who dominate the argumentative frame and will continue to stall progressive solutions to warming

Hoppe 99 Robert Hoppe is Professor of Policy and knowledge in the Faculty of Management and Governance at Twente University, the Netherlands. "Argumentative Turn" Science and Public Policy, volume 26, number 3, June 1999, pages 201–210 works.bepress.com

ACCORDING TO LASSWELL (1971), policy science is about the production and application of knowledge of and in policy. Policy-makers who desire to tackle problems on the political agenda successfully, should be able to mobilise the best available knowledge. This requires high-quality knowledge in policy. Policy-makers and, in a democracy, citizens, also need to know how policy processes really evolve. This demands precise knowledge of policy. There is an obvious link between the two: the more and better the knowledge of policy, the easier it is to mobilise knowledge in policy. Lasswell expresses this interdependence by defining the policy scientist's operational task as eliciting the maximum rational judgement of all those involved in policy-making. For the applied policy scientist or policy analyst this implies the development of two skills. First, for the sake of mobilising the best available knowledge in policy, he/she should be able to mediate between different scientific disciplines. Second, to optimise the interdependence between science in and of policy, she/he should be able to mediate between science and politics. Hence Dunn's (1994, page 84) formal definition of policy analysis as an applied social science discipline that uses multiple research methods in a context of argumentation, public debate [and political struggle] to create, evaluate critically, and communicate policy-relevant knowledge. Historically, the differentiation and successful institutionalisation of policy science can be interpreted as the spread of the functions of knowledge organisation, storage, dissemination and application in the knowledge system (Dunn and Holzner, 1988; van de Graaf and Hoppe, 1989, page 29). Moreover, this scientification of hitherto 'unscientised' functions, by including science of policy explicitly, aimed to gear them to the political system. In that sense, Lerner and Lasswell's (1951) call for policy sciences anticipated, and probably helped bring about, the scientification of politics. Peter Weingart (1999) sees the development of the science-policy nexus as a dialectical process of the scientification of politics/policy and the politicisation of science. Numerous studies of political controversies indeed show that science advisors behave like any other self-interested actor (Nelkin, 1995). Yet science somehow managed to maintain its functional cognitive authority in politics. This may be because of its changing shape, which has been characterised as the emergence of a post-parliamentary and post-national network democracy (Andersen and Burns, 1996, pages 227-251). National political developments are put in the background by ideas about uncontrollable, but apparently inevitable, international developments; in Europe, national state authority and power in public policy-making is leaking away to a new political and administrative elite, situated in the institutional ensemble of the European Union. National representation is in the hands of political parties which no longer control ideological debate. The authority and policy-making power of national governments is also leaking away towards increasingly powerful policy-issue networks, dominated by functional representation by interest groups and practical experts. In this situation, public debate has become even more fragile than it was. It has become diluted by the predominance of purely pragmatic, managerial and administrative argument, and under-articulated as a result of an explosion of new political schemata that crowd out the more conventional ideologies. The new schemata do feed on the ideologies; but in larger part they consist of a random and unarticulated 'mish-mash' of attitudes and images derived from ethnic, local-cultural, professional, religious, social movement and personal political experiences. The market-place of political ideas and arguments is thriving; but on the other hand, politicians and citizens are at a loss to judge its nature and quality. Neither political parties, nor public officials, interest groups, nor social movements and citizen groups, nor even the public media show any inclination, let alone competency, in ordering this inchoate field. In such conditions, scientific debate provides a much needed minimal amount of order and articulation of concepts, arguments and ideas. Although frequently more in rhetoric than substance, reference to scientific 'validation' does provide politicians, public officials and citizens alike with some sort of compass in an ideological universe in disarray. For policy analysis to have any political impact under such conditions, it should be able somehow to continue 'speaking truth' to political elites who are ideologically uprooted, but cling to power; to the elites of administrators, managers, professionals and experts who vie for power in the jungle of organisations populating the functional policy domains of post-parliamentary democracy; and to a broader audience of an ideologically disoriented and politically disenchanted citizenry.

#### Policy-Making is the only choice for engaging in environmental debate. Any alternative fails and cedes the political

Hicham-Stéphane **Afeissa**, program director at the Collège international de philosophie. His main current research fields are Anglo-American environmental ethics, “The Transformative value of Ecological Pragmatism. An Introduction to the Work of Bryan G. Norton”, 20**08**, http://sapiens.revues.org/88

The first of these puts forward the necessarily militant component of environmental ethics in its role as an emerging field of research. In this respect, there are only two possible outcomes: **either environmental ethicists genuinely aim to guide policies by subjecting them to relatively rational rules, in which case their failure to achieve this objective so far should encourage them to consider**, firstly, **what it is in their way of expressing and dealing with problems that has prevented them from succeeding, and** secondly**, to** adapt their discursive strategy to the realities of politics**; or else the theorists of environmental ethics choose to pursue their metaphysical wrangles over the status of the intrinsic value of natural entities, over the possibility of considering ecosystems from a moral standpoint** and other issues such as the number of angels who can dance on the head of a pin, **in which case** they need to decide once and for all whether they really care about the current ecological crisis**.** **According to Norton**, what actually mattersas regards the environment, is **not so much taking principled stances, but rather developing** rational **aids to** decision-making,so that **the various** actors can agree on **what should be done and develop the** concrete policy measures which need to be implemented**. In this sense, petty in-fighting between anthropocentrists and non-anthropocentrists, humanists and ecocentrists, "shallow" and "deep ecologists",** etc., **are all the more damaging that they divide environmental ethicists and stifle efforts for concerted and effective action.** The second argument makes the point that the **discussion between anthropocentrists and non-anthropocentrists is particularly futile insofar as the major concept of "human interests**" (or human utility), **on which the whole discussion focuses, is left very much undefined**. The fact that **satisfying human interests does not necessarily involve the irreversible destruction of the object of desire is insufficiently noted: there is a distinction to be made between utility which is satisfied by the immediate consumption of natural goods** (raw materials, agricultural products, etc.) **and a utility which implies the conservation of the useful object since conservation is a prerequisite for satisfying human interests** (this is the case for all the ecological services provided by nature without which we would very soon be deprived of any access to consumer goods). More generally, far from being no more than a source of raw materials or an open-air dumping ground for our waste, **nature can have an aesthetic, moral, spiritual or scientific value for humans**. In this case, **so that the satisfaction nature provides can endure, the object must remain intact since satisfaction is in a way inseparable from the object itself, to the point of being inherent to it**—making it possible, so to speak, to assign a educational, (and no longer metaphysical) meaning to the concept of intrinsic value, inasmuch as the objects of satisfaction are not considered to be indefinitely and indiscriminately substitutable. **From this stems the concept of distinguishing**, as Norton did in the early 1980s, **between "strong anthropocentrism" and "weak** (or extended) **anthropocentrism**. **Only the latter is capable of not under-estimating the diversity of instrumental values that humans may derive from the natural world, and** correlatively **not homogenising the plurality of interests or preferences they experience** (a spontaneous "feeling" of preference is essentially different from a "considered" preference which is mediated by a given vision of the world). **A theory is** said to be **strongly anthropocentrist if all the natural values it recognises are related to the satisfaction of preferences felt by human beings. A theory of value is said to be weakly anthropocentrist if all the natural values which it recognises are related to the influence exerted by a given "felt" preference on the ideals which structure the vision of the world** (and on which are essentially based "considered" preferences)3. **The practical difference between these two kinds of theories is considerable**. Insofar as **preferences felt by humans are not subject to any review within the value system of strong anthropocentrism, there is no way in which can be criticised the attitude of those for whom nature is no more than a store of raw materials** to be extracted and used in manufacturing products to satisfy human preferences. **Inversely, insofar as weak anthropocentrism recognises that felt preferences may, or may not, be rational** (in the sense that they may be judged as not being consonant with a rational vision of the world), **it provides a framework for the possible critical review of the value systems which prescribe a relationship with nature based on pure exploitation**: **In this way, weak anthropocentrism makes available two ethical resources of crucial importance to environmentalists. First, to the extent that environmental ethicists can make a case for a world view that emphasizes the close relationship between the human species and other living species, they can also make a case for ideals of human behavior extolling harmony with nature. These ideals are then available as a basis for criticizing preferences that merely exploit nature. Second, weak anthropocentrism as here defined also places value on human experiences that provide the basis for value formation. Because weak anthropocentrism places value not only on felt preferences, but also on the process of value formation embodied in the criticism and replacement of felt values with more rational ones, it makes possible appeals to the value of experiences of natural objects and undisturbed places in human value formation. To the extent that environmentalists can show that values are formed and informed by contact with nature, natures takes on value as a teacher of human values**. (Norton, B., 1984, p. 135) **This latter value is** the one which Norton soon came to designate by the name of "**transformative value**", i.e. **a value capable of transforming preferences in accord with a higher ideal**. It is remarkable that this is neither an instrumental, nor a non-instrumental (or intrinsic) value, but rather a value which cannot be reduced to either of these categories, which are therefore revealed as unable to express the entire range of values that humans can attribute to nature. **Rather than be forced into accepting this bipartite classification of natural values, Norton suggests an acceptance of their essential plurality and situating them in a kind of continuum, ranging from the values of consumer society to aesthetic, spiritual and other similar values. In such circumstances, the environmentalist's task, when entering the public arena, will be to defend and command the respect**— to the fullest extent possible—**of the above principles, while seeking to define an environmental policy capable of the fullest and most harmonious integration of the entire range of natural values**. Norton's belief on this point, is that **programmes for the protection of the environment are perfectly justifiable on the basis of a sufficiently broad interpretation of anthropocentric instrumental values and, better still, that this point of view has an undeniable practical advantage,** on the one hand **because it is the mode of justification which is the most current among environmentalists and therefore constitutes an immediately recognised forum for debate and**, on the other hand, **because by neutralising the axiological controversy between intrinsic value and human utility, it allows for individual subjectivity to choose between the various philosophical options. As a result, the debate is moved to the area of rational modes of environmental action. It is this idea** that **the author**, after further consideration, **reworded under the name of "convergence principle**", **meaning that between defenders of intrinsic value and supporters of anthropocentrism, there is a double convergence despite disagreement on the value principle**. On the one hand, the convergence is in practical terms (as regards recommended measures and action strategies); and on the other hand it is axiological (due to the possibility of taking into consideration values ignored by strict anthropocentrism). As Norton points out specifically, the corollary of this principle is the recognition of the validity of two distinct types of methodological pluralism, one of which could be named "theoretical pluralism" and the other "meta-theoretical pluralism". The first of these accepts the existence of a multiplicity of mutually incommensurable theoretical models which can be the foundation for the moral considerability of natural entities. The models remain theoretically different but in practice this makes almost no difference, as for example, the model based on the criterion of animal sentience (as in Peter Singer) to justify animals being given moral consideration, or the one which refers to the determination of all organic individuality as the teleological centre of life (as in Paul Taylor). The second type of pluralism accepts the possibility that **several divergent moral theories, which do not even agree on the determination of environmental ethics issues, can nevertheless work together as part of a single moral enterprise—as happens** for example **when ecofeminists and ecocentric environmentalists cooperate to save the same natural habitat, even though their respective commitment is in practice based on very different theoretical considerations4**. **The advantage of a pluralistic approach to values is that**, by its very nature, **it is prepared to seek compromise and determine jointly, through environmental policy negotiations, the conditions for cooperative action, thus making it possible to form strategic causal coalitions**5. The chances of finding common ground are all the greater **as environmental pragmatism does not refer to any concept which would be difficult to justify in philosophy, as that of "intrinsic value", nor does it in any way suppose that one needs to adopt, before even entering into discussion, any particular "vision of the world".** Although it does firmly denounce the attempt to reduce all natural values to the status of economic ones, and although it criticises the systematic use of cost-benefit analysis and warns against the pitfalls of the contingent valuation method, **environmental pragmatism shares with decision-makers the fundamental and firmly-held belief that solutions to environmental problems must be found in the sustainable development of economic systems, for the sake of our responsibility to future generations who must be able to benefit from the generosity and services offered by the ecosystem: In our search of an environmental ethic** we will never, I submit, **find any environmental values or goals more defensible than the sustainability principle".** (Norton, B., 2003, p. 63)

#### Avoiding anti-politics key to prevent the worst violence

Jonathan Small, former Americorps VISTA for the Human Services Coalition, “Moving Forward”, The Journal for Civic Commitment, Spring 2006, http://www.mesacc.edu/other/engagement/Journal/Issue7/Small.pdf

What will be the challenges of the new millennium? And how should we equip young people to face these challenges? While we cannot be sure of the exact nature of the challenges, we can say unequivocally that humankind will face them together. If the end of the twentieth century marked the triumph of the capitalists, individualism, and personal responsibility, the new century will present challenges that require collective action, unity, and enlightened self-interest. Confronting global warming, depleted natural resources, global super viruses, global crime syndicates, and multinational corporations with no conscience and no accountability will require cooperation, openness, honesty, compromise, and most of all solidarity – ideals not exactly cultivated in the twentieth century. We can no longer suffer to see life through the tiny lens of our own existence. Never in the history of the world has our collective fate been so intricately interwoven. Our very existence depends upon our ability to adapt to this new paradigm, to envision a more cohesive society. With humankind’s next great challenge comes also great opportunity. Ironically, modern individualism backed us into a corner. We have two choices, work together in solidarity or perish together in alienation. Unlike any other crisis before, the noose is truly around the neck of the whole world at once. Global super viruses will ravage rich and poor alike, developed and developing nations, white and black, woman, man, and child. Global warming and damage to the environment will affect climate change and destroy ecosystems across the globe. Air pollution will force gas masks on our faces, our depleted atmosphere will make a predator of the sun, and chemicals will invade and corrupt our water supplies. Every single day we are presented the opportunity to change our current course, to survive modernity in a manner befitting our better nature. Through zealous cooperation and radical solidarity we can alter the course of human events. Regarding the practical matter of equipping young people to face the challenges of a global, interconnected world, we need to teach cooperation, community, solidarity, balance and tolerance in schools. We need to take a holistic approach to education. Standardized test scores alone will not begin to prepare young people for the world they will inherit. The three staples of traditional education (reading, writing, and arithmetic) need to be supplemented by three cornerstones of a modern education, exposure, exposure, and more exposure. How can we teach solidarity? How can we teach community in the age of rugged individualism? How can we counterbalance crass commercialism and materialism? How can we impart the true meaning of power? These are the educational challenges we face in the new century. It will require a radical transformation of our conception of education. We’ll need to trust a bit more, control a bit less, and put our faith in the potential of youth to make sense of their world. In addition to a declaration of the gauntlet set before educators in the twenty-first century, this paper is a proposal and a case study of sorts toward a new paradigm of social justice and civic engagement education. Unfortunately, the current pedagogical climate of public K-12 education does not lend itself well to an exploratory study and trial of holistic education. Consequently, this proposal and case study targets a higher education model. Specifically, we will look at some possibilities for a large community college in an urban setting with a diverse student body. Our guides through this process are specifically identified by the journal Equity and Excellence in Education. The dynamic interplay between ideas of social justice, civic engagement, and service learning in education will be the lantern in the dark cave of uncertainty. As such, a simple and straightforward explanation of the three terms is helpful to direct this inquiry. Before we look at a proposal and case study and the possible consequences contained therein, this paper will draw out a clear understanding of how we should characterize these ubiquitous terms and how their relationship to each other affects our study. Social Justice, Civic Engagement, Service Learning and Other Commie Crap Social justice is often ascribed long, complicated, and convoluted definitions. In fact, one could fill a good-sized library with treatises on this subject alone. Here we do not wish to belabor the issue or argue over fine points. For our purposes, it will suffice to have a general characterization of the term, focusing instead on the dynamics of its interaction with civic engagement and service learning. Social justice refers quite simply to a community vision and a community conscience that values inclusion, fairness, tolerance, and equality. The idea of social justice in America has been around since the Revolution and is intimately linked to the idea of a social contract. The Declaration of Independence is the best example of the prominence of social contract theory in the US. It states quite emphatically that the government has a contract with its citizens, from which we get the famous lines about life, liberty and the pursuit of happiness. Social contract theory and specifically the Declaration of Independence are concrete expressions of the spirit of social justice. Similar clamor has been made over the appropriate definitions of civic engagement and service learning, respectively. Once again, let’s not get bogged down on subtleties. Civic engagement is a measure or degree of the interest and/or involvement an individual and a community demonstrate around community issues. There is a longstanding dispute over how to properly quantify civic engagement. Some will say that today’s youth are less involved politically and hence demonstrate a lower degree of civic engagement. Others cite high volunteer rates among the youth and claim it demonstrates a high exhibition of civic engagement. And there are about a hundred other theories put forward on the subject of civic engagement and today’s youth. But one thing is for sure; today’s youth no longer see government and politics as an effective or valuable tool for affecting positive change in the world. Instead of criticizing this judgment, perhaps we should come to sympathize and even admire it. Author Kurt Vonnegut said, “There is a tragic flaw in our precious Constitution, and I don’t know what can be done to fix it. This is it: only nut cases want to be president.” Maybe the youth’s rejection of American politics isn’t a shortcoming but rather a rational and appropriate response to their experience. Consequently, the term civic engagement takes on new meaning for us today. In order to foster fundamental change on the systemic level, which we have already said is necessary for our survival in the twenty-first century, we need to fundamentally change our systems. Therefore, part of our challenge becomes convincing the youth that these systems, and by systems we mean government and commerce,have the potential for positive change.Civic engagement consequently takes on a more specific and political meaning in this context. Service learning is a methodology and a tool for teaching social justice, encouraging civic engagement, and deepening practical understanding of a subject. Since it is a relatively new field, at least in the structured sense, service learning is only beginning to define itself. Through service learning students learn by experiencing things firsthand and by exposing themselves to new points of view. Instead of merely reading about government, for instance, a student might experience it by working in a legislative office. Rather than just studying global warming out of a textbook, a student might volunteer time at an environmental group. If service learning develops and evolves into a discipline with the honest goal of making better citizens, teaching social justice, encouraging civic engagement, and most importantly, exposing students to different and alternative experiences, it could be a major feature of a modern education. Service learning is the natural counterbalance to our current overemphasis on standardized testing. Social justice, civic engagement, and service learning are caught in a symbiotic cycle. The more we have of one of them; the more we have of all of them. However, until we get momentum behind them, we are stalled. Service learning may be our best chance to jumpstart our democracy. In the rest of this paper, we will look at the beginning stages of a project that seeks to do just that.

#### Pragmatic warming policy is effective and key to prevent extinction

Simpson 10 (Francis, College of Engineering, Vanderbilt University, “Environmental Pragmatism and its Application to Climate Change The Moral Obligations of Developed and Developing Nations to Avert Climate Change as viewed through Technological Pragmatism”, Spring 2010 | Volume 6 | Number 1)

Pragmatism and Footprinting¶ Environmental pragmatism is a relatively new field of environmental ethics that seeks to move beyond the strictly theoretical exercises normal in philosophy and allows the environmental movement to formulate substantial new policies (Light, 1). Environmental Pragmatism was initially posited by Bryan Norton and evolved to not take a stance over the dispute between non-anthropocentric and anthropocentric ethics. Distancing himself from this dispute, he preferred to distinguish between strong and weak anthropocentricism (Light, 290-291, 298). The main philosophers involved in advancing the debate in environmental pragmatism include Eric Katz, Andrew Light, and Bryan Norton. This particular discipline advocates moral pluralism, implying that the environmental problems being faced have multiple correct solutions. Light argues that the urgency of ecological crises requires that action is necessary through negotiation and compromise. While theorists serve to further the field of environmental ethics and to debate the metaethical basis of various environmental philosophies, some answers to questions are best left to private discussion rather than taking time to argue about them publically (introduction of pragmatism). Pragmatism believes that if two theories are equally able to provide solutions to a given problem, then debate on which is more is argued that: “the commitment to solving environmental problems is the only precondition for any workable and democratic political theory” (Light, 11). While the science behind a footprint is well understood, what can the synthesis of environmental pragmatism and footprinting tell us about the moral obligation to avert climate change? How does grounding the practice of sustainability footprinting in environmental pragmatism generate moral prescriptions for averting climate change?¶ Environmental Pragmatism necessitates the need for tools in engineering to be developed and applied to avert the climate change problem, since pragmatism inherently calls for bridging the gap between theory and policy/ practices. With the theory of pragmatism in mind, further research and development of tools such as life-cycle analysis and footprinting are potential policy tools that are necessary under a pragmatist viewpoint so that informed decisions can be made by policy makers. Since the role of life-cycle analysis and footprinting attempt to improve the efficiency and decrease the overall environmental impact of a given process, good, or service, environmental pragmatism would call for the further development and usage of these tools so that we can continue to develop sustainably and fulfill our moral obligation to future generations. By utilizing footprinting and life-cycle analysis, it becomes possible to make environmentally conscious decisions not only based upon a gut instinct but additionally based on sound science. Finally, in regards to averting climate change, footprinting and life-cycle analysis offer another dimension to traditional cost-benefit analysis and can allow for our moral obligation to future generations to weigh into final decisions which will eventually result in policies and/ or a production of a good or service. Since traditional cost benefit analysis does not account for the environment explicitly, pragmatism would call for the application of these tools to ensure that the environment is adequately protected for future generations.¶ Climate change modeling inherently contains many unknowns in terms of future outcomes and applied simplifications, but these factors should not be enough to hold us back from an environmental pragmatism stand point. Rather than hiding behind a veil of uncertainty with the science, the uncertainty of the possible catastrophic outcomes demands action on the part of every human individual. Environmental pragmatism could also adopt a view point like the precautionary principle where a given action has great uncertainty, but also great consequence (Haller). Since we are attempting to protect human lives and prevent unnecessary suffering, environmental pragmatism would dictate that we should take action now and stop debating the theoretical aspects of this problem. A moral obligation exists to protect human life, and it becomes our obligation to avert climate change. Despite the relatively high economic costs of averting climate change, it is worth noting that the creation of green jobs and new sectors will help to stimulate the economy rather than completely hindering it. People inherently fear change, and it is my opinion that averting climate change requires a drastic change in our consumption patterns, an important reason why people are resisting averting climate change. From an environmental pragmatism viewpoint, it is humanities responsibility to avert climate change before it is too late since we have a moral obligation to protect the future of humanity and the biosphere.

#### Specifically – Natural gas is the only best pragmatic option to deal with warming

Charles K. **Ebinger**, Director, Energy Security Initiative Govinda Avasarala, Research Assistant, Foreign Policy, Energy Security Initiative The Brookings Institution 4-22-**10**, Environmental Pragmatism <http://www.brookings.edu/opinions/2010/0422_environmental_pragmatism_ebinger.aspx>, jj

Finally, **people need to embrace pragmatism**. **Though it is not ideal and rarely a sexy declaration, pragmatism and incrementalism are** the **obligatory** taxes of multilateral agreements (mind you, they are less obtrusive with fewer parties). **There are many tools at our disposal that can put the stalled climate change efforts into first gear**. First, **we must embrace bridge technologies, such as natural gas, nuclear energy, and state of the art cleaner coal**. **With total global renewable energy capacity falling catastrophically short of global energy demand, ‘bridge’ technologies can ease the environmental strain while we wait for renewable capacity to reach requisite levels**. In addition, investments in upgrading many nations’ electricity grids will make a remarkable difference in the environmental impact of power generation. **The need for action to reduce climate change is very real, particularly as many emerging economies and failed and near-failed states are most at risk and can potentially spur widespread global unrest**. **Clinging to an inefficient, incapable system will only exacerbate the crisis of inaction at a time where the world can ill-afford it. By focusing on smaller negotiations** with actual large emitters, garnering a better understanding of the real economics behind climate change, **and embracing smaller steps in ‘bridge’ technologies, we can do a far more effective job of getting the ball rolling.**

#### Epistemology and ontology focus fails

Jarvis 2K (D.S.L., Lecturer n Government - U of Sydney, INTERNATIONAL RELATIONS AND THE CHALLENGE OF POSTMODERNISM, p. 128-9)

Certainly it is right and proper that we ponder the depths of our theoretical imaginations, engage in epistemological and ontological debate, and analyze the sociology of our knowledge. But to suppose that this is the only task of international theory, let alone the most important one, smacks of intellectual elitism and displays a certain contempt for those who search for guidance in their daily struggles as actors in international politics. What does Ashley's project his deconstructive efforts, or valiant tight against positivism say to the truly marginalized, oppressed and destitute? How does it help solve the plight of the poor, the displaced refugees, the casualties of war, or the emigres of death squads? Does it in any way speak to those whose actions and thoughts comprise the policy and practice of international relations? On all these questions one must answer no. This is not to say, of course, that all theory should be judged by its technical rarionality and problem-solving capacity as Ashley forcefully argues. But to suppose that problem-solving technical theory is not necessary—or is in some, way bad—is a contemptuous position that abrogates any hope of solving somve of the nightmarish realities that millions confront daily. Holsti argues, we need ask of these theorists and these theories tne ultimate question, “So what?” to what purpose do they deconstruct problematize, destabilize, undermine, ridicule, and belittle modernist and rationalist approaches? Does this get us any further, make the world any better, or enhance the human condition? In what sense can this "debate toward [a] bottomless pit of epistemology and metaphysics" be judged pertinent relevant helpful, or cogent to anyone other than those foolish enough to be scholastically excited by abstract and recondite debate.

#### Reps-focus also fails

Dewsbury ’03, (John-David Dewsbury -- School of Geographical Studies, University of Bristol -- Environment and Planning A 2003, volume 35, pages 1907-1932 -- http://www.sages.unimelb.edu.au/news/mhgr/dewsbury.pdf)

That someone includes us -- the social scientists, the researchers, and the writers. In some way we are all false witnesses to what is there.(2) So, even though the philosophical drive moves against the apparently sterile setup of totalizing representations, the presentation of ideas is trapped within the structure it is trying to critique. In my opinion, this sterility is only apparent. Significantly, this appearance is valid from both sides: from the side of representational theory because of the belief in the representational structure as being able to give an account of everything; and from the side of nonrepresentational theory because of the danger of getting carried away with an absolute critique of representations. The apparent sterility comes from this last point: that in getting carried away with critique you fail to appreciate that the building blocks of representation are not sterile in themselves -- only when they are used as part of a system. The representational system, its structure and regulation of meaning, is not complete -- it needs constant maintenance, loyalty, and faith from those who practice it. In this regard, its power is in its pragmatic functions: easy communication of ideas (that restricts their potential extension), and sustainable, defensible, and consensual agreement on understanding (a certain kind of understanding, and hence a certain type of knowledge). The nonrepresentational argument comes into its own in asking us to revisit the performative space of representation in a manner that is more attuned to its fragile constitution. The point being that representation left critically unattended only allows for conceptual difference and not for a concept of difference as such. The former maintains existing ideological markers whilst the latter challenges us to invent new ones. For me, the project of nonrepresentational theory then, is to excavate the empty space between the lines of representational meaning in order to see what is also possible. The representational system is not wrong: rather, it is the belief that it offers complete understanding -- and that only it offers any sensible understanding at all -- that is critically flawed.

***Federal de-regulation won’t cause a race to the bottom.***

**Willie ‘12**

Matt Willie, J.D. candidate, April 2012, J. Reuben Clark Law School, Brigham Young University, Brigham Young University Law Review, 2011 B.Y.U.L. Rev. 1743, Hydraulic Fracturing and "Spotty" Regulation: Why the Federal Government Should Let States Control Unconventional Onshore Drilling, Lexis, jj

B. Federal v. State: Why "Spotty" Regulation is Better Regulation

 **The push for more federal control of hydraulic fracturing** seems at least partly motivated by differences in state approaches to the issue. Professor Wiseman, for example, argues that "the varying complexity and breadth of state oil and gas regulation suggests that some states are not adequately protecting underground sources of drinking water." n198 The flaw in such arguments, however, is that they [\*1772] **ignore the fact that the depth, accessibility, extraction techniques, and characteristics of oil and gas reserves vary from state to state**. In fact, **that fracking regulation in the United States has been "spotty**" n199 **may actually be a good thing.**

1. Regional differences

In many respects, ***the more local and specialized the regulation, the better***. This is true primarily because **oil and gas extraction methods**, and therefore hydrofracking techniques, **are** almost **always geologic-and region-specific**. n200 **This fact makes additional federal regulation unnecessary at best and** potentially ***extremely problematic*** **if it conflicts with local and state land use controls.** The Texas Supreme Court hinted at this idea in the Coastal Oil opinion. n201 A major basis for the court's decision was the desirability of deferring to the Texas Railroad Commission on oil and gas matters, especially where they involve questions of property boundaries and extraction techniques within specific reserves. n202 The Commission has the luxury of focusing all its time and manpower on oil and gas regulation (something the court lacks) and has sufficient remedial authority to enforce its rules in a way that both protects landowners n203 and promotes "the state's goals of preventing waste and conserving natural resources." n204 Such realities make the Commission, not the court, the appropriate entity for formulating effective regulatory provisions. For similar reasons, **federal intervention into state regulation of fracking seems unnecessary**. Just as a commission's staff of experts is better equipped than judges to promulgate rules for state oil and gas development, **state officials are** generally **more informed about local and regional production techniques than federal regulators**. n205 Not [\*1773] only do many energy-producing states operate under somewhat conflicting theories of oil and gas law, n206 but **the state commissions that design rules that conform to those theories must be aware of the location, form, and accessibility of their hydrocarbon reserves in order to effectively regulate.** Of course, federal agencies can set up regional offices, and federal regulators can familiarize themselves with local industry realities, but **federal employees will never be subject to the same kind of political accountability as state officials, and this may make them less receptive to local concerns**. Perhaps more importantly, **federal officials remain bound by federal directives drawn up by bureaucrats who reside far from most of the reserves their regulations affect.** Ironically, **even proponents of federal regulation acknowledge the need for region-specific fracking rules**. Professor Wiseman notes that, "**invariably, effects will differ by region, by the type of operation and disposal methods used, and the type of formation fracked**." n207 **State officials are arguably more familiar with these variables than federal employees, yet she promotes an additional, potentially burdensome layer of federal control**. n208 This seems shortsighted simply because ***what works well in one state may work poorly in another.*** This reality has long been a burr in the side of would-be federal mining regulators. Despite widespread expansion of national environmental protections throughout the twentieth century, n209 Congress struggled to craft effective mining legislation. This was primarily because geological and regional differences encouraged a [\*1774] state-centric regulatory scheme. n210 A former government attorney who helped draft the Surface Mining Control and Reclamation Act of 1977 pointed out that coal regulation "differs significantly from other federal environmental regulatory statutes" primarily because of "the "diversity' in coal mining areas." n211 This concern eventually resulted in Congress admitting that "**the primary governmental authority for developing, authorizing, issuing, and enforcing [mining] regulations ... should rest with the States**." n212 Such **diversity is** even more **apparent among** oil and **gas formations**. A comparison of operations in the Bakken Shale with those in the Barnett Shale is illustrative. Bakken companies primarily drill for oil, n213 while Barnett operators produce gas. n214 **Typical spacing in the Bakken can be as much as 1280 acres per well**, n215 **as opposed to Barnett spacing, which rarely exceeds 100 acres**. n216 **This, of course, creates far fewer wells in the Bakken states and thus a better opportunity to avoid drilling near communities. Likewise, Bakken states** (Montana and North Dakota) **are largely rural to begin with, making land use decisions simpler and disputes regarding property lines and leasehold interests less common. Even the use of fracking fluids varies widely by field and formation. As the EPA noted, "on any one fracturing job, different fluids may be used in combination or alone at different stages in the fracturing process**. **Experienced service company engineers will devise the most effective fracturing scheme, based on formation** [\*1775] **characteristics, using the fracturing fluid combination they deem most effective**." n217 Fracking companies in Montana, for example, "have been using relatively non-intrusive fluids - mostly a gel water sand frack, with the gel consisting of a drilling mud or a polymer." n218 In Pennsylvania's Marcellus Shale, on the other hand, there have been reports of higher than expected levels of radiation in wastewater from fracked wells. n219 **Arguments for more federal intervention *consistently fail* to account for these realities**. Professor Wiseman writes, for example, that an "absence of regulation [would] not [be] of great concern if fracking [were] a relatively benign practice that could be sufficiently controlled through the general permitting process; but if fracking has significant environmental and public health impacts, the lack of regulation is problematic." n220 The problem with such an all-or-nothing analysis is that **fracking is both benign and environmentally hazardous - depending on its location**. n221 **In some states, the general permitting process provides adequate environmental protections; in others, more stringent rules are justified**. n222 But **these are decisions that ought to be left to state policymakers and state regulatory agencies, not federal employees who may be ignorant to specific local and regional practices and** may **thus** rely on articles like Wiseman's, which **downplay the importance of geological dissimilarities and variations in fracking technique. With state regulations already providing extensive environmental protections, additional federal fracking controls**, in all likelihood, **can** [\*1776] **have only one of two effects: either (1) they will "have little impact," representing "no more than ideological tinkering with state law";** n223 **or (2) they will alter the entire state-centric system, essentially voiding many workable state rules, creating overlapping controls that slow down domestic oil and gas production, and producing uniform standards for fracking techniques that ought to vary by field and region.** Should Congress opt for such a uniform system, the safest route would be to force all states to adopt stringent fracking rules. The problem is that while **such regulations** might be appropriate and welcomed in New York, they **could be unnecessarily restrictive in states like Montana and North Dakota.** At the same time, ***crafting a middle-of-the-road national standard could send the message that stricter requirements are unnecessary*.** n224

2. Federal regulatory failures

Obviously, only a shortsighted system would fail to account for at least some regional and geological differences. But **even if each state's reserves were identical, no evidence suggests that federal fracking regulation would be superior to state control**. In fact, **the BP spill and other recent energy industry problems have created concerns that the entire federal energy regulatory machine is simply too large, and too politically dominated, to be effective**. n225 As **the National Commission on the BP Deepwater Horizon Spill** and Offshore Drilling **described, from its outset "federal regulation of offshore drilling awkwardly combined" two competing priorities - environmental protection and energy independence - which were often difficult to reconcile "as a series of Congresses,** [\*1777] **Presidents, and Secretaries of the Interior" moved in and out of power**. n226 **The result was an odd**, and often ***irrational***, **set of rules**. "**In some offshore regions**," for example, "oil **drilling was essentially banned in response to environmental concerns. Elsewhere**, **most notably in the Gulf, some environmental protections and safety oversight were formally relaxed or informally diminished so as to render them ineffective**." n227 **As drilling moved further offshore and more money poured into federal coffers, safety and environmental risks increased**. Unfortunately, **these risks "were not matched by greater, more sophisticated regulatory oversight**." n228 Some problems were due to the fact that **the same federal agency, the** Minerals Management Service (**MMS**), **was "responsible for regulatory oversight of offshore drilling - and for collecting revenue from that drilling**." n229 **A 2008 study by the Interior Department revealed numerous ethical scandals involving MMS employees**, "including allegations of financial self-dealing, accepting gifts from energy companies, cocaine use and sexual misconduct." n230 **Another Interior Department report prepared after the BP spill cited communication problems at the Agency as well as unevenly staffed offices and inadequate training.** n231 As the National Commission put it: **The overall picture of MMS that has emerged since [the spill] is distressing. MMS became an agency systematically lacking the resources, technical training, or experience in petroleum engineering that is absolutely critical to ensuring that offshore** [\*1778] **drilling is being conducted in a safe and responsible manner. For a regulatory agency to fall so short of its essential safety mission is inexcusable**. n232 **In light of such failures, it is puzzling that critics of fracking believe so adamantly in the superiority of national controls over a state-centric system that has worked with relatively few problems for six decades.**

C. Financial Costs of Federal Regulation

Even if fracking regulators were somehow immune from the failures that have plagued other agencies, **additional federal regulation should not be adopted without a realistic assessment of its price tag**. Testifying before the House Committee on Energy and Commerce in 2005, Victor Carrillo, chairman of the Texas Railroad Commission, argued that **stricter federal fracking standards "would not result in cleaner water but only in adding significant cost**. **Such unnecessary regulation and the concomitant cost can only serve to ~~retard~~ the development of much needed natural gas in this country**." n233 This statement seems even more appropriate six years later, as **additional research has revealed just how significant those costs could be. Merely studying the issue at the federal level can be expensive**. As part of its Science to Achieve Results Program, **the EPA requested $ 4.3 million for fracking research alone in fiscal year 2011**. n234 The amount constitutes a $ 2.5 million increase from 2010. n235 **The costs of actually administering a federal fracking regulatory program, after research is completed and rules are drafted, would undoubtedly be *astronomically higher*. Compounding this concern is the serious potential for federal financial waste**. According to a study completed in early 2011 by the Government Accountability Office, "**overlapping and duplicative** [\*1779] [**federal] programs ... cost taxpayers billions of dollars each year**." n236 **The nonpartisan office uncovered a staggering number of federal inefficiencies, including "82 federal programs to improve teacher quality; 80 to help disadvantaged people with transportation**; 47 for job training and employment; and 56 to help people understand finances." n237 **It seems unlikely that additional federal hydraulic fracturing regulation, if enacted, would not suffer from similar financial inefficiencies.** Of course, state regulatory agencies could be just as wasteful. Nevertheless, **citizens are arguably more equipped to hold local and state government officers politically accountable for their waste**. n238 **This is so not only because citizens generally have greater access to local and state leaders, but also because they can compare government spending in their state with that of neighboring states.** n239 In contrast, **selecting appropriate foreign governments for comparisons of federal spending seems a much more daunting task. Regardless of the cost to taxpayers, additional federal regulation would put a significant financial burden on developers. A 2009 report** prepared for the American Petroleum Institute estimates that **national fracking legislation could increase the costs of shale plays by $ 47,333 per well and non-shale plays by $ 109,833 per well**. n240 Perhaps even more troubling is that **such "added costs raise the economic threshold ... at which a play can be developed," decreasing the total number of wells operators who are willing to drill**. n241 As the report explains: Experience suggests **that a 20% reduction in the number of wells completed each year due to increased regulation is a valid** [\*1780] **assumption due to the additional time needed to file permits, push-back of drilling schedules due to higher costs, increased chance of litigation, injunction or other delay tactics used by opposing groups and availability of fracturing monitoring services**. n242 **Such costs would undoubtedly be passed along to consumers, compounding government waste with higher prices at the pump.**

V. Conclusion

**The tremendous economic impact of hydraulic fracturing should not be understated**. **As the need to replace conventional sources of energy becomes more pressing, the United States' dependence on foreign oil and the risks of offshore drilling may combine to make the debate about fracking and other unconventional forms of drilling one of the most important energy-related issues** of the twenty-first century. **Special interest groups insist that fracking's impact** on the environment **is disastrous, but decades of study have revealed only minor concerns**. **In light of federal regulatory failures such as those that led to the BP disaster in the Gulf, leaving control of hydraulic fracturing with the states seems to be a far more prudent course**. Local and regional industry realities should guide energy regulation in the United States, and **state officials are far more equipped than federal employees to successfully account for the geological and human variables that shape onshore development**. State regulation of such development has intensified as unconventional methods of drilling have increased. In the process, courts have properly addressed the legal aspects of hydraulic fracturing while giving appropriate deference to agency regulations based on state common law theories, legislative directives, environmental needs, and local practices. **Hydraulic fracturing has played an important role in the oil and gas industry for more than sixty years. Regulatory intrusions by the federal government at this point will only create unnecessary financial burdens and hinder developers' ability to efficiently extract hydrocarbons.** [\*1781] As the Groundwater Protection Council warned more than a decade ago: "**If additional federal regulations were to be imposed they would not be based on scientific observation of associated contamination, and there would be little if any increase in protection of public health and the environment**." n243 W**ith so little to gain, the costs of additional federal controls are simply unjustifiable.**

***States regulations will fill in and solve.***

**Willie ‘12**

Matt Willie, J.D. candidate, April 2012, J. Reuben Clark Law School, Brigham Young University, Brigham Young University Law Review, 2011 B.Y.U.L. Rev. 1743, Hydraulic Fracturing and "Spotty" Regulation: Why the Federal Government Should Let States Control Unconventional Onshore Drilling, Lexis, jj

**What is conspicuously missing from many of these groups' arguments, however, is an explanation of how and why federal regulation will actually diminish fracking's environmental risks**. In fact, a closer look at much of the rhetoric against a state-centric regulatory system reveals not so much a push for federal regulation, but rather for federal prohibition of hydraulic fracturing. n122 Perhaps [\*1762] this is because, by and large, **state control of hydrofracking is already relatively expansive. As fracking has become more widespread, state regulation of the practice has intensified**, although specific rules vary widely. n123 Some see this variation as a reason for more federal control. n124 But as the following discussion illustrates, **every producing state has promulgated a considerable amount of fracking regulation, whether through general permitting processes or more directly**. n125 **Wyoming**, for example, **was the first state to require companies to fully disclose the chemicals used in their fracking fluids.** n126 **The state also requires drillers to give notice to surface owners of planned oil and gas operations on their lands and make good faith efforts to enter into "surface use agreements" that will protect surface resources, provide for reclamation of disturbed areas, and determine a payment for any** damages caused by the operations. n127 **Developers must show that they have complied with this requirement before the** [\*1763] **Wyoming Oil and Gas Commission will grant a permit to drill** n128 or a permit to construct a pit for retaining fluids. n129 Moreover, before any well can be used for injection activities, **an operator must demonstrate to the Commission that its casing is leak-proof and able to withstand pressures of at least 300 pounds per square inch**. n130 **New York has perhaps the nation's strictest fracking controls**. Shortly before leaving office in late 2010, former governor David Paterson "issued an executive order imposing a moratorium on permits for horizontal wells and instructed the [Department of Environmental Conservation] to revise its draft of standards governing the use of high-volume fracking." n131 In July of 2011, the Agency released a revised Draft Supplemental Generic Environmental Impact Statement (SGEIS) which recommended that the moratorium be kept in place in certain areas and lifted in others, subject to strict regulation. n132 Even without the moratorium, the state's rules are far from lenient. An operator seeking to drill needs to submit an application for a permit, pay a permit fee, offer a description of the planned drilling project, provide three copies of a plat, and complete an Environmental Assessment Form. n133 This form "provides information about the physical setting of the proposed project, the general character of the land and land use, the projected size of the area that will be disturbed and the length of time the drilling rig will be on the [\*1764] site." n134 A Supplemental Environmental Impact Statement and additional permits may also be necessary. n135 Even **Professor Wiseman calls the state's fracking rules "relatively comprehensive**." n136 **She says the same about Pennsylvania**, even though the state uses general oil and gas rules to regulate fracking. n137 Strong permitting requirements compel operators to account for any water sources or coal seams near drilling sites, n138 and the Department of Environmental Protection may deny permits that would violate any applicable environmental law. n139 The state also has separate rules for exploration activities in the Marcellus Shale. n140 Likewise, **Colorado has adopted comprehensive fracking regulations**. In 2009, the state overhauled its rules, providing more protections against methane contamination. n141 Even before the overhaul, the Colorado Oil and Gas Conservation Commission (COGCC) instituted a "mitigation program" to seal improperly abandoned wells. The program resulted in a reduction of methane concentrations in close to 30% of all sampled water wells. n142 More recently, the Commission has begun investigating the use of diesel fuel in fracking operations and regularly testing groundwater wells for contamination. n143 The COGCC also requires operators to maintain a "Chemical Inventory" of all chemicals used in drilling and completion, including fracturing, at each well site. n144 **The Alabama Oil and Gas Board claims that it "investigates every complaint it receives**." n145 A unique feature of its investigations is that each one includes research regarding "historical water quality [\*1765] data." n146 As the EPA explains, this "information is important because the coal-bearing Pottsville Formation often contains high concentrations of iron." n147 The symptoms of iron staining, which can occur suddenly and "in water with a history of good quality," are apparently similar to those of methane contamination. n148 Such observations show the importance of accounting for regional characteristics in fracking regulations. Perhaps more than any other state, **Texas has been criticized for its fracking regulations**, primarily because until recently no rule addressed the practice specifically. n149 **That changed** in June of 2011, **when** Texas governor **Rick Perry** **signed into law H.B. 3328, which requires operators to publicly disclose chemicals used in fracturing applications**. n150 Even without the legislation, much of the criticism of Texas is misplaced, since, as Professor Wiseman herself admits, **many of the state's general oil and gas regulations "apply to various components of the fracking process.**" n151 Like other states, **operators cannot drill without a permit**, n152 **and they must obtain a Water Board Letter from the state Commission on Environmental Quality setting out "the depth to which fresh water must be protected" for each well**. n153 **No operator in the state "may dispose of any oil and gas wastes [which would include fracking fluids] by any method without obtaining a permit**." n154 In addition, **the state has extensive casing and cementing regulations, including requirements that all casing be** [\*1766] **made of steel and "hydrostatically pressure tested," and that "all usable-quality water zones be isolated and sealed off to effectively prevent contamination or harm."** n155 Despite the peculiarities of each state's regulatory system, **almost all share several common features. Every producing state, for example, has "permitting requirements governing the locating, drilling, completion, and operations of wells."** **n156 Almost all have casing and cementing requirements designed to isolate ground water from production zones**. n157 **Every state but one requires regulatory authorization before operators can leave a well idle**. n158 **And all twenty-seven producing states have regulations regarding the proper plugging of wells**. n159 **Given the level of scrutiny most states are already applying to hydraulic fracturing, it is difficult to see how federal agencies could significantly curb any of the few environmental effects left unaddressed**. Congress's decision in 2005 to exempt most aspects of fracking from federal regulation has been criticized as a "loophole" for developers. n160 But as the Independent Petroleum Association of America states, "This characterization is entirely inaccurate; **Congress' action merely keeps in place a system that has worked for half a century**." n161