

**1. STATE OF NEW MEXICO  
BEFORE THE ENVIRONMENTAL IMPROVEMENT BOARD**

**PETITION TO ADOPT NEW REGULATIONS )  
AND TO AMEND VARIOS SECTIONS OF )  
TITLE 20, CHAPTER 2, PARTS 1,2,70, AND )  
72 OF THE NEW MEXICO ADMINISRATIVE )  
CODE FOR THE PURPOSE OF CREATING A )  
STATEWIDE CAP ON GREENHOUSE GAS )  
EMISSIONS AND PROMULAING OTHER )  
REQUIREMENTS RELATED THERETO )**

Pursuant to 20.1.1.300 NMAC, and on the basis of of testimony to be delivered at the Public Hearings set for August, 2009, New Mexico Conference of Churches and the Rio Grande Chapter of the Sierra Club (“Petitioners”) petitions the Environmental Improvement Board (“EIB”) to adopt new regulations or amend its existing regulations as necessary, for the purpose of promulgating a statewide cap on greenhouse gas emissions. We ask that intermediate goals (in the period up to and including 2020) be set consistent with at least 75% reduction of GHG (CO2e) by 2050 relative to 2000 (the goal set in the Governor's order, 2005-033).

I. STATEMENT OF REASONS: The Board should grant this Petition and adopt the proposed regulatory changes for the following reasons:

**A. IPCC and Stern Reports.** The world scientific community has concluded that climate change is a major threat to humanity and all other life on the planet, and that the threat is caused primarily by Green House Gas (GHG) build up in the atmosphere to a level 390 ppm CO2e (2006) over the pre-industrial value, 280 ppm CO2e, caused in turn by enhanced combustion of fossil fuels by the world's population. The enormous increase in GHG emitted into the atmosphere is a direct result of the industialization that characterizes modern society, and the per capita emission rate of the US is far higher than that of any other people. Further, the **rate** of GHG emissions is still growing for all countries. These basic facts are laid out in great detail in the latest report by the UN Intergovernmental Panel on Climate Change (IPCC), and the economic consequences of both action and inaction to ameliorate the GHG build up are detailed in the “Stern Report,” see “The Stern Review,” Cambridge U. Press, Cambridge, UK, 2007. According to the Stern Report, the economic costs of immediate action to mitigate GHG emissions are only about 1% of world GDP, but Stern shows the cost to the world

economy grows very rapidly with delay in setting GHG limits. Other economic studies (see below) of limiting GHG emissions just in the US are in general agreement with these modest cost projections.

**B. Recent Science.** The IPCC report is a very conservatively drafted document, vetted through both the entire relevant world wide scientific community and the relevant science agencies of the participating countries, and thus does not reflect the very most recent science. That scientific perspective, however, is darkening both markedly and rapidly, as new findings and new research delve deeper into this enormously complex and difficult subject. Three recent reports by some of the world's best scientists are worth quoting here, because they highlight the extremely serious nature of the problem, and the increasingly dark prognosis.

1. Anderson and Bows (Philosophical Transactions A of the Royal Society (London) Vol. 366 No. 1882 (2008).) have studied the likelihood that the world can decrease emissions fast enough to control total CO<sub>2</sub>e content in the atmosphere lower than 450 ppm, which is generally thought to be a “safe” level (about 50% probability of temperature increase of 2 degrees C). Their finding is that no emission reduction path is possible which would not cause serious economic dislocation, and hence would be politically impossible. Their study shows that politically and economically practicable reduction paths will lead to the order of 650 ppm, corresponding to roughly 4 degrees C temperature rise, which is well above the probable “safe” level. Even that emission path would require serious emission control policies far beyond the current state of things.
2. Solomon, et al. (Proceedings National Academy of Science, Vol 106 p 1704 (2009).) has shown that CO<sub>2</sub> is held in the atmosphere for very long times, so that it is not reasonable policy to think that GHG gases can be allowed to overshoot and then stabilize at much lower levels by natural GHG absorption processes.
3. Finally, Hansen, et al. (Open Atmospheric Science Journal, Vol. 2 p 217 (2008).) has studied the long term impacts of high levels of GHG gases, and considered the effects of “slow” feedbacks from the ocean, with paleo climate data. He proposes that the permitted level of atmospheric CO<sub>2</sub> (other gases decay fast, and are not relevant in the long term) are in the neighborhood of 350 ppm CO<sub>2</sub>, or a point **below today's levels.**

Hansen is one of the most prestigious American climatologists, so his opinions must be taken seriously, but his views on this point are not universally accepted.

These recent results are very sobering in themselves, but the total body of recent research confirms the generally darkening picture (see a recent study by the NRDC (Global Warming Science update September 2008 by C. Snyder and D. Lashof)). Indeed, in a recent poll of climatologists, a British newspaper reported that a large fraction believe we will not be able to control GHG levels at safe levels at all by GHG emission limits. This means the world will be driven, in time, to adopt drastic “climate engineering” efforts, to actually bring the GHG levels in the atmosphere **down** from future levels, and to take additional serious “adaptation” policies world wide.

Far from backing away from GHG emission limitations as a hopeless approach, it means that responsible NM climate policy requires that NM should adopt serious and practical GHG emission mitigation limits as quickly as possible.

**C. Local Climate Effects.** The previous paragraphs discuss the global and international impacts of GHG growth, but there are also serious warnings about the effects of climate change on NM.

Dr. Craig Allen, a distinguished forest ecologist with the USGS Science Center at Fort Collins, and member of the Western Mountains Initiative (a group set up to study the response of Western mountains to climate variability), and Prof. David Breshears at the Univ. Arizona have shown that dominant vegetation across extensive portions of our mountains can shift in just a few years from ponderosa to pinyon pine and from pinyon to juniper as a result of drought, with associated changes in under story vegetation and wildlife habitat, and that these shifts can be long lasting. (Proceedings of the National Academy of Science, Vol. 95 p 14839 (1998) and Vol. 102 p 15144 (2005).) According to their research, these responses to temporary droughts localized in time show that rapid, severe and extensive drought-induced die-off of overstory trees can be expected from global change droughts predicted for NM. These results must be read in light of the predictions by Solomon quoted above that the SW will suffer severe drought conditions under global warming.

**D. Costs of GHG Regulation.** To these inputs from the science community, in setting GHG caps, one must factor in the expected economic costs and benefits. The long term costs are

particularly difficult to estimate, because of the great difficulty in estimating the so-called “fat tail” of extreme values (low probability catastrophic events) and their importance. (For example, what are the costs associated with the loss of sky island ecologies in the American SW, or the loss of large tracts of ponderosa pine forest and their ecologies, or the loss of snow run-off for river systems?) But shorter term direct costs can be estimated from savings of efficiency measures, for example, and these results are very encouraging.

The report, “What will it cost to protect ourselves from global warming?” published in 2008 by the Environmental Defense Fund is particularly useful, because it shows that the costs of GHG regulation in 2030 lower the rate of growth in the economy by only about 10%, which is truly negligible relative to the uncertainties inherent in the economy over that time. (The current enormous economic “fluctuation” is a case in point.) They also show that the household electricity bills are difficult to predict, but that increases seem to be in the order of 10% or somewhat above.

An earlier study by McKinsey of the costs (“Reducing US Greenhouse Gas Emissions: How Much at What Cost”, Dec. 2007) confirms these conclusions, and shows in great detail the cost breakdown by abatement option, many of which result in negative rather than positive costs.

Thomson (unpublished) has developed a model of the NM electric system, and shows that the electricity cost increase in 2020 due to GHG regulation is in the range of 10 – 20%, depending upon the economy growth assumptions.

In all these models (except Thomson), the effect of new technology is not estimated, and will certainly have a large impact.

In summary, **the direct costs** of implementing GHG control are small, and truly negligible in comparison to the very high costs of damage from climate change, without GHG control – even taking into account the very high “error bars” on the damage costs of climate change.

**E. Direct Economic Benefits of GHG Regulation.** An attempt to estimate the direct economic benefits of implementing GHG control has been made by the earlier CCAG study in NM. These benefits include estimates of gains from efficiency, and of job creation, especially in new “green” industries. These latter can be significant, for example in the shift from a low labor intensive coal plant to a more labor intense utility efficiency program. According to CCAG, the economy has a **net gain**

under GHG control of an amazing \$630M cumulative by 2020. Most of the savings are projected to come from the electric and housing sectors. Whether or not these numbers are even approximately correct, they show that there is an enormous upside potential for GHG control.

The suggested total economic benefits indicated by the CCAG report points to a major reason for NM to adopt GHG regulation at this time. **It is to our direct competitive economic benefit.** A proprietary study by the Clean Tech Group reported by the Environmental Defense Fund in a weekly posting on Aug 8, 2008 shows that California venture capital and company investment correlates directly with introduction and passage of the AB32 clean technology bill in California. So California benefits directly from its green policies in terms of green technology investment in the state, which has led to its leading position in green industry technology development. Although such a correlation for NM can only be inferred, there is a strong presumption that new green economic development in NM would follow a strong signal, such as adoption of a GHG cap, that NM has a friendly environment for green investment and business. We believe **this is perhaps the strongest reason for EIB to move forward forcefully at this time with GHG control regulation, thereby putting NM into a leading competitive position on GHG control policies.**