James M. Taylor, Senior Fellow of Environment Policy,

The Heartland Institute

Professional Engineers of Colorado Presentation

February 22, 2008

Thank you very much for the kind introduction and for the opportunity to speak here today. Thank you, also, Dr. Gray and Dr. Hayden, for the very informative presentations on climate science. What I would like to do with my time is address the specifics of the Governor's Climate Action Plan, especially from an economic perspective.

Forest Fires and Drought

From the very first page, the report demonstrates that it is neither scientifically nor economically well founded. For example, in Governor Ritter's remarks on the first page he states unequivocally, "Forest fires will be more common and more intense." There are no caveats or qualifications to this statement. Of course, neither are there any references to scientific studies or to real-world data.

So we are left to wonder, what do scientists who actually research such issues tell us about droughts and forest fires? Surprisingly absent from the Governor's statement and the Climate Action Plan is that the overwhelming scientific evidence is that droughts are becoming less frequent during our recent warming.

The July 2004 issue of *International Journal of Climatology* reports, "It is now clear that many places in the Northern Hemisphere, and in Australia, have become less arid." The study concludes, "A good analogy to describe the changes in these places is that the terrestrial surface is literally becoming more like a gardener's greenhouse" (http://www.rsbs.anu.edu.au/Profiles/Graham_Farquhar/documents/214RoderickAustpan2004_000.pdf).

The May 25, 2006 issue of *Geophysical Research Letters* reports that for 20th century soil moisture, "An increasing trend is apparent in both model soil moisture and runoff over much of the U.S." The study adds, "This wetting trend is consistent with the general increase in

precipitation in the latter half of the 20th century. Droughts have, for the most part, become shorter, less frequent, and cover a smaller portion of the country over the last century" (http://www.agu.org/pubs/crossref/2006/2006GL025711.shtml).

Indeed, the National Oceanic and Atmospheric Administration reports, "A number of tree-ring records exist for the last two millennia which suggest that 20th century droughts may be mild when evaluated in the context of this longer time frame" (http://www.ncdc.noaa.gov/paleo/drought/drght_data.html).

So what we have on one side is a simplistic, scientifically unsupported statement from a politician, while on the other side we have two of the most prestigious science journals in the world and the National Oceanic and Atmospheric administration telling us that there is no connection between global warming and drought. This begs the question, who do YOU believe?

Creating Jobs

Also on the first page of the Climate Action Plan, the Governor asserts that switching to his preferred renewable energy sources will create thousands of jobs for trained workers. However, this assertion is very misleading and ignores economic reality.

Despite what activist groups and the renewable power industry may tell you, alternative power mandates will not create jobs or boost the state's economy. Indeed, simple common sense tells us that if a product makes economic sense, you don't have to subsidize it to make people produce it, and you don't have to put a gun to somebody's head to make him or her purchase it. The unavoidable reason why renewable power comprises such a small percentage of U.S. power generation is because it is significantly more expensive to produce than conventional power. If indeed it were otherwise, we wouldn't need Climate Action Plans to distort the market and punish economically beneficial consumer purchasing choices.

Real-world data support such common-sense wisdom. Business Week magazine reports that the true price of wind power is $91 per megawatt hour, after factoring in the $40 per megawatt hour of federal subsidies (http://www.businessweek.com/magazine/content/07_44/b4056001.htm). By contrast, coal costs merely $37 per megawatt hour (http://www.nytimes.com/2006/12/28/business/28wind.html). Therefore, we see that wind power is 2 ½ times more expensive than coal power. And solar power is far more expensive than wind power. Indeed, according to the U.S. Energy Information Administration, even if we ignore the staggering behind-the-scenes subsidies received by renewable power, the average retail price of electricity in states with renewable power mandates is 42% higher than the price of electricity in

states without such mandates (http://www.eia.doe.gov/cneaf/electricity/epa/fig7p4.html, http://www.cei.org/pdf/5982.pdf).

Assertions by the Governor that renewable power creates jobs are misleading at best. True, if you mandate the construction of renewable power plants, you are creating jobs for people who build such plants. But you are at the same time taking away jobs from the people who build more cost-efficient conventional power plants, and you are taking away the jobs that would have been created in more productive sectors of the economy if Colorado citizens had been able to keep their money, rather than spend it on more expensive power sources, and spend it on goods and services that actually provide them with some benefit. Renewable power mandates create some jobs in the narrow sector of renewable power generation while eliminating a greater number of jobs in other sectors of the economy; sectors that would have enhanced the standard of living for citizens of Colorado.

As an analogy, a Colorado law outlawing self-service gas pumps would create thousands of jobs for professional gas pumpers. However, a greater number of jobs would be eliminated elsewhere in the economy because money that used to be spent on goods and services that actually benefitted people would now be spent on unnecessary gas-pumping services. No serious economist would argue that outlawing self-service gas pumps would create jobs and be good for the economy, yet this is exactly the kind of argument that the Governor is making in support of the market distortions contained in the Climate Action Plan.

Indeed, we can put tangible numbers on the economic beat-down that the Climate Action Plan would unleash on Colorado consumers. Economic experts at the widely respected Charles Rivers Associates consulting company examined what comparable legislation would do the Colorado economy and released their findings just three months ago. According the economic experts, such a plan would send more than 57,000 people into unemployment, would reduce Colorado's gross state product by 2.3 percent per year, and would reduce the purchasing power of the average Colorado household by nearly $1,200 each and every year. Indeed, because of the Governor's Climate Action Plan, an economy that would today be considered stagnant and economically depressed will soon be called a pretty good economic year.

Moreover, Charles Rivers Associates is not alone its gloomy economic assessment of the Governor's Climate Action Plan. Numerous leading economists and economic institutions have analyzed the costs of addressing greenhouse gases – which would necessarily entail reducing conventional power generation in favor of renewable power – and virtually all have reached the same conclusion; reducing greenhouse gas emissions through the greater use of renewable power will have substantial negative repercussions on the economy and on our standard of living.

2007 Congressional Budget Office Study

For example, according to a 2007 study conducted by the Congressional Budget Office (CBO) (http://www.cbo.gov/ftpdocs/80xx/doc8027/04-25-Cap_Trade.pdf), reducing greenhouse gas emissions by a mere 15 percent would cost the average household nearly 3 percent of its income. A family making $50,000 per year would be forced to pay an extra $1,400 every year for the same goods and services it purchases today.

"Most of the cost of meeting a cap on CO2 emissions would be borne by consumers, who would face persistently higher prices for products such as electricity and gasoline. Those price increases would be regressive in that poorer households would bear a larger burden relative to their income than wealthier households would," CBO determined.

Moreover, "A CO2 cap would worsen the negative effects" of "existing taxes that dampen economic activity--primarily taxes on labor, capital, or personal income, such as payroll taxes and individual or corporate income taxes," CBO reported. "The higher prices caused by the cap would lower real (inflation-adjusted) wages and real returns on capital, indirectly raising marginal tax rates on those sources of income."

2007 MIT Study

A 2007 study by the Massachusetts Institute of Technology (MIT) reached similar conclusions. According to the MIT study (http://web.mit.edu/globalchange/www/MITJPSPGC_Rpt146.pdf), mandatory greenhouse gas reduction schemes similar to those most popular in Congress and the state legislatures would cost typical families of four close to $5,000 each and every year.

2003 Energy Information Administration Study

A 2003 study by the U.S. Energy Information Administration (EIA) (http://www.eia.doe.gov/oiaf/servicerpt/ml/pdf/summary.pdf) found that mandatory greenhouse gas reductions similar to the most frequently proposed federal and state legislation would result in a 27 percent increase in gasoline prices and a 46 percent rise in electricity prices.

2007 Nordhaus Study

Moreover, in 2007, Yale University economics professor William Nordhaus conducted an analysis of numerous proposals to reduce greenhouse emissions (http://nordhaus.econ.yale.edu/dice_mss_072407_all.pdf). Nordhaus discovered that substantial near-term reductions in greenhouse gas emissions are extremely costly while achieving little measurable benefit. “Because the initial emissions reductions are so sharp in the ambitious proposals, they impose much higher costs than are required to attain the same environmental objective,” Nordhaus concluded.

Nordhaus instead recommended that greenhouse gas reductions be phased in very gradually – indeed much more gradually than the Governor's Climate Action Plan. Requiring substantial emissions cuts before the technology exists to efficiently reduce them sentences consumers to unnecessary economic pain, especially when even global warming alarmists admit that most of their projected – and largely discredited, I might add – predictions of serious global warming harms would not occur until many decades or even centuries from now.

Even assuming alarmist global warming predictions, Nordhaus observed that the optimal method of reducing greenhouse gas emissions would require only a 25 percent reduction by 2050, with more stringent reductions required – and more readily achievable – after that time.

2004 Mendelsohn Study

Indeed, in 2004, Yale University economics professor Robert Mendelsohn (http://www.copenhagenconsensus.com/Admin/Public/DWSDownload.aspx?File=Files%2FFiler%2FCC%2FPapers%2FOpponent+notes%2FOpponent_Note_-_Climate_Change_-_Mendelsohn.pdf) concluded that the benefits of global warming will outweigh the harms until temperatures surpass 2.5 degrees Celsius warmer than they are today. Scientists do not expect temperatures to surpass 2.5 degrees Celsius until at least the 22nd century.

2007 IPCC Report

In 2007, the United Nations Intergovernmental Panel on Climate Change (http://www.ipcc.ch/WG1_SPM_17Apr07.pdf) analyzed agricultural output in a warming world and reached the same conclusion as Mendelsohn; agricultural production in places such as the Great Plains should experience a net benefit from projected global warming for at least the next several decades. Efforts to reduce greenhouse gas emissions will not only cost Colorado farmers substantial money in out-of-pocket mitigation costs, but they will also cost Colorado farmers substantial money in reduced agricultural output.

2004 Copenhagen Consensus

Finally, in 2004, the Danish government convened many of the world's leading economists and presented them with the following scenario: Assuming a budget of tens of billions of dollar to address global health and environment concerns, where would the money best be spent? From a list of more than a dozen health and environmental issues, the world's leading economists ranked addressing global warming as dead last in terms of benefits accrued per dollar spent, even assuming IPCC global warming scenarios. Significantly, the economists concluded that spending such money on preventing global warming actually did more harm than good, as the minimal human welfare benefits accrued by somewhat mitigating temperatures failed to equal the human misery that would result from taking such money out of current expenditures that improve human welfare.

Bountiful Ecosystems

Now let's get back to some of the other particularly noteworthy assertions in the Climate Action Plan. On page 6 it states, "Over the past 650,000 years, the average concentration of greenhouse gases maintained by nature gave the planet a balanced climate that fostered bountiful ecosystems and eventually civilization and agriculture.

Actually, the vast majority of the past 650,000 years has been dominated by ice age conditions in which neither the climate was balanced nor was the ecosystem bountiful. Most of the past 650,000 years have been characterized by constant polar ice and regular intervals of ice sheets advancing and holding their ground into the middle latitudes. Extremely cold periods (called glaciations), have dominated for periods of approximately 150,000 years, only to be interrupted by much briefer periods of warmer temperatures and retreating ice sheets (called interglacials) that typically last for 10,000 years.

We are currently in an interglacial called the Holocene, which has lasted for 10,000 years. Historically speaking, we are imminently due for a return to the prolonged, devastating cold of another glaciation. It was largely because we are due for another glaciations that a decades-long cooling spell in the mid-twentieth century led a large number of scientists and news media to report that the next glaciation was upon us. Fortunately, that cold spell was a false alarm.

As a side note, ice core samples have shown that current temperatures are at least three degrees Celsius cooler than temperatures that existed during the past four interglacials. Indeed, scientists in 2007 discovered that temperatures in Greenland were approximately fifteen degrees Celsius warmer during one of those interglacials than they are today. From a historical standpoint, our current interglacial is remarkably cold.

Still further, temperatures in our present interglacial have fluctuated significantly, with many periods of alternating warming and cooling temperatures. After the last glaciation ended 10,000 years ago, temperatures rose rapidly and remained warmer than today until approximately 1000 BC. Temperatures have been relatively cool since then, although they were higher than today for brief periods—lasting a few hundred years apiece—around 2,000 and 1,000 years ago. Indeed, around 1000 AD, Vikings settled Greenland in areas that are now buried under massive snow and ice sheets, and wine grapes were grown in the British Isles in areas that are far too cold for such endeavors today.

Beginning around 1200 AD, temperatures began dramatically cooling in a period called the Little Ice Age. Then, in the 1600s through the 1800s, the earth's temperature reached its coldest level

since the last glaciation. It is against this backdrop of record cold Holocene temperatures that our recent warming has occurred. During our current warming, beginning in the late 1800s, temperatures have risen about one degree Celsius from the record lows of the Little Ice Age. Total warming during the twentieth century was approximately 0.6 degrees Celsius, with approximately 0.4 degrees of that warming occurring from 1900 to 1945.

Current temperatures, therefore, are neither unusual nor alarming when viewed in a historical perspective.

The Climate Action Plan goes on to add that "The last century and a half of industrialization changed the balance." It is important to note that a century and a half ago the planet was in the depths of the Little Ice Age, in which temperatures were colder than they had been since the last ice age epoch 10,000 years ago. If indeed it was human activity that rescued us from the depths of the Little Ice Age, all I can say is, thank God. After all, during the Little Ice Age growing seasons were shorter, crop production was substantially less, deserts were more extensive, soil moisture was lower, droughts were more frequent, severe, and long-lasting, forests were less rich, and ecosystems were far more strained than they are today. The Climate Action Plan calls the Little Ice Age "balanced" and "bountiful" – which leads students of science and history to call the Climate Action Plan imbalanced and delusional.

The Climate Action Plan asserts that if action is not taken to reduce greenhouse gas emissions, global temperatures will rise by 3.6 to 10.4 degrees Fahrenheit this century. Such assertions demonstrate either incredible scientific ignorance or deliberate deception and deceitfulness. The latest IPCC projections anticipate that 8.0 degrees Fahrenheit is the WORST case scenario this century, 4.4 degrees is the most likely scenario, and 2.6 degrees is also quite likely. Moreover, temperatures rose only 1.4 degrees Fahrenheit during the entire 20th century, and temperatures have not risen at all since 1998. When a report such as the Climate Action Plan grossly inflates the numbers and misrepresents basic factual data, it should serve as a big red flag that not only the temperature predictions, but also the entire report is more about propaganda than science.

On page 7, the Climate Action Plan reports that "droughts are longer and more intense in some areas." Once again, we see deceptive and distorted science. While I imagine it is possible that "in some areas" there has higher than normal drought during the past 100 years, as the multitude of scientific sources I quoted early demonstrate, MOST of the planet has seen more precipitation, higher soil moisture, and less frequent, less severe drought during the past century. Once again, when a report such as the Climate Action Plan grossly inflates the numbers and misrepresents basic factual data, it should serve as a big red flag that not only the temperature predictions, but also the entire report is more about propaganda than science.

Hurricanes

The Climate Action Plan asserts that global warming is causing more intense hurricanes. Of course, no scientific support is cited. So let US examine the science.

The National Oceanic and Atmospheric Administration, known as the NOAA, on November 29, 2005 released a study in response to claims that Hurricanes Katrina and Rita were caused by global warming. According to NOAA, "NOAA attributes this increased activity to natural occurring cycles in tropical climate patterns near the equator. … NOAA research shows that the tropical multi-decadal signal is causing the increased Atlantic hurricane activity since 1995, and is not related to greenhouse warming." (http://www.magazine.noaa.gov/stories/mag184.htm)

Scientists at the National Hurricane Center published a study on May 1, 2007 documenting that hurricane activity is no higher now than in decades past. Regarding the number of recent hurricanes compared to earlier decades, "[W]e don't see any new trend. There's no link to global warming that you can see at all," the lead scientist reported. (http://www.newsdaily.com/TopNews/UPI-1-20070502-19042700-bc-us-hurricanes.xml)

Hurricane expert William Gray reported just a few days earlier, on April 27, 2007, that the number of major hurricanes making landfall on the U.S. Atlantic coast has declined in the past 40 years, even while temperatures and carbon dioxide levels have risen. (http://www.iht.com/articles/ap/2007/04/28/america/NA-GEN-US-Top-Forecaster-Global-Warming.php)

Hurricane scientists from the National Oceanic and Atmospheric Administration reported in the April 18, 2007 *Geophysical Research Letters* that computer models show global warming will not significantly increase hurricane activity. Global warming will cause more wind shear, which serves to prevent hurricanes from forming, the hurricane scientists report.

"The environmental changes found here do not suggest a strong increase in tropical Atlantic hurricane activity during the 21st century," reported the authors. (http://www.rsmas.miami.edu/pressreleases/20070417-wind.html)

Less Rain

The Climate Action Plan asserts that global warming will cause less precipitation to fall, although it cites no scientific date. Yet, as I quoted earlier from the May 25, 2006 Geophysical Research Letters, "This wetting trend is consistent with the general increase in precipitation in

the latter half of the 20th century. Droughts have, for the most part, become shorter, less frequent, and cover a smaller portion of the country over the last century."

Beetle Infestations

The Climate Action Plan asserts that global warming is causing, "Widespread beetle infestations wiping out pine forests, and die-off in aspen stands." Once again, this is a very deceptive assertion.

A study on variations in northern hemisphere forests and vegetation taken from satellite data from 1981-1999, reported in the September 16, 2001 (http://www.gsfc.nasa.gov/topstory/20010904greenhouse.html) issue of *Journal of Geophysical Research*, found an 8-to-12 percent increase in vegetation across North America and Eurasia.

A subsequent comment in the same journal, *Journal of Geophysical Research,* concluded that a concurrent rise in atmospheric CO2 was primarily responsible for the increased forests and vegetation. (http://www.co2science.org/scripts/CO2ScienceB2C/articles/V5/N45/EDIT.jsp)

There is no scientific evidence presented that global warming is causing an increase in beetle infestations. Moreover, even if global warming were someday to be linked to more beetle infestations, global warming is causing forests as a whole to expand and become more abundant. Assuming for the sake of argument that beetle infestations are on the rise, and assuming for the sake of argument that the successful efforts by environmental activists to ban successful pesticides such as DDT have played no part in the alleged increase beetle numbers, the truth remains that forests are expanding and becoming more dense due to global warming.

Indeed, according to a recent study in Science magazine, pine forests in the Western United States averaged only 57 trees per hectare in 1876, but now contain as many as 2,100 trees per hectare.

Assertions by the Climate Action Plan that global warming is leading to beetle infestations "wiping out" forests are sensationalist and conveniently forget to mention the more important point that forests are expanding and growing more dense due to global warming. It misses the forest for the trees, so to speak.

West Nile

The Climate Action Plan asserts that global warming is causing the "rapid spread of West Nile virus." Yet West Nile virus thrives in a wide variety of climates, and has thrived as far north as Canada. Moreover, the West Nile Virus assertion once again deliberately reports only part of the story to achieve its sensationalist propaganda objectives.

Cold kills more people than heat. And although it is dubiously asserted that warmer temperatures will lead to more West Nile cases, it is beyond question that cooler conditions facilitate the spread of the much more prevalent and much more deadly influenza viruses. If the Climate Action Report is going to bring up illness and disease at all, it must not cherry-pick certain diseases while completely ignoring other diseases of greater impact if it is to have any objectivity and scientific credibility.

Recommendations

There are many other examples that I could cite of cherry-picked and misrepresented assertions in the Climate Action Plan and in the mainstream media regarding global warming effects, but in deference to time constraints, let's just skip to some of the recommendations of the Climate Action Plan.

The Climate Action Plan tells us that we should "fight climate change" by doing the following: living with colder buildings in the winter; foregoing clothes dryers and hanging our laundry outside to dry; walking to work instead of driving our cars; and, here is my favorite, only buying recyclable products. Did somebody forget to tell the Governor that it requires massive amounts of gasoline to send trucks all over the city to pick up from homes and deliver to facilities recyclable materials? Did somebody forget to tell the Governor that the recycling process is extremely energy intensive and unnecessarily emits massive amounts of greenhouse gases? Did somebody forget to tell the Governor that some of the worst EPA superfund sites are recycling facilities?

But I digress. Colder winter buildings, hanging our laundry outside to dry, walking to work, reducing our driving speeds…. Where I come from, we have a name for this, it is called the 70s. Most of you come from there, too. I imagine it was as unpleasant for most of you as it was for most of the nation. Been there, done that, it failed miserably.

Two Visions

What we are presented with are two visions. One sells economic and environmental doom and gloom, and is based on dubious science. It would put Colorado in a perpetual economic recession, would kill tens of thousands of jobs, and would substantially reduce the standard of

living of Colorado citizens. Worse, it is neither scientifically justified nor necessary, as Drs. Gray and Hayden demonstrated.

And indeed, Drs. Gray and Hayden are not alone. More than 19,000 scientists have signed a petition, sponsored by a past president of the National Academy of Sciences and co-authored by a professor of astrophysics at Harvard University, stating that scientific evidence does not support alarmist global warming theory.

Moreover, a recent survey of more than 500 of the world's leading climate scientists, conducted by Germany's Institute of Coastal Research, found that less than half of climate scientists believe that the science justifies turning the global warming issue over to policymakers, such as Governor Ritter and his global warming team. It is important to note that these are the world's leading climate scientists themselves saying that there is no scientific justification for Governor Ritter to be proposing his economically destructive Climate Action Plan.

Given a choice between backing the misleading science of the Governor's Climate Action Plan or the findings of more than 19,000 scientists and the consensus of the world's leading climatologists, I think the answer is quite clear. And if the science doesn't convince you, then perhaps the economics should.