

**The Third Presidents' Forum on Meeting Coastal Challenges
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There's a story about a man goes into the doctor's office.

He said, "Doc I'm having a problem that's embarrassing.

Yesterday, sitting in my new boss's staff meeting, I had 4 silent gas emissions.

Later in day, at children's school play, I had 5 more silent gas emissions while sitting in audience.

Last night at church during prayer, I had 6 silent gas emissions.

This morning at my favorite aunt's funeral services, I had 7 silent gas emissions while kneeling to pay my last respects.

And, I have to admit as I have been sitting here speaking to you I have had 3 more silent gas emissions." "Doc, what can you do, for me?"

The doctor who had an increasingly pained expression on his face while the man was talking said, "The first thing we need to do is have your hearing checked."

I guess the point is a whole lot of people in Washington need to get their hearing checked.

Greenhouse gas and climate change is not a fad or a hoax like that crop circle thing.

The recently released report from the Intergovernmental Panel on Climate Change provides overwhelming evidence mankind is headed for a crisis of biblical proportion.

- 180 nations have signed and ratified Kyoto.
- 12 states have sued the EPA to force regulation of greenhouse gas. (Entergy the only utility is also party to suit.)
- 30 states are working to establish a greenhouse gas registry.
- 15 states are actively considering their own restrictions on greenhouse gases.

- 165 mayors from 37 states agreed to voluntary measures to do their part.

Meanwhile, in Washington, we have a voice vote in the Senate on Climate Change but no action other than to form a study committee with no authority to actually do anything.

At Entergy we're long past debating the science behind climate change.

Obviously, the research should continue, in fact, more resources should be devoted to critical issues like

- land-ice melt
- dynamic ice flow
- carbon sink capacity
- and various amplifying affects

And, the debate should be vigorous, among scientists.

The rest of us just need to get on with it (while incorporating the latest science as we go).

As a company, that's what we have done.

We committed to stabilize greenhouse gas at the year 2000 level and we're 23% below that now.

We did not wait on our competitors to do the same or federal government to pass a law requiring it.

We often hear Washington say they are going to run government more like a business but I can't think of an issue handled less like a business than this.

Instead, Climate Change seems to have brought out the worst in spin politics.

- Argue “the problem doesn't exist.”
- Argue “it's a good thing, not a bad thing.”
- Argue “there's nothing we can do about it anyway” and in this case, as a last resort, “shoot the messenger.”

With regard to the first two points, these are the probability curves from IPCC models. If you showed probability curves like this to the Board of a Fortune 500 Company or even to Tony Soprano you'd get the same response – “we're done here!”

The shape of the curves alone tells you everything you need to know. You have asymmetric outcomes and a fat tail to the bad side of the distribution curve that cannot be hedged. The “expected outcomes” don't matter. No rational CEO or even those in the lucrative and risky “waste management business” would ever place a bet on a probability distribution curve if the tail included this much catastrophic risk.

The stock market may be a random walk but fortunes are more likely to be lost than made in those tails.

And as a society, the stakes on Climate Change are much higher. The levels of responsibility are exponentially so.

But, under the best estimates by scientists, even the expected outcome is horrific by itself.

- 20 – 40 % of all species facing extinction
- up to 170 million people face flooding every year
- ½ billion people face constant hunger due to low crop yields.

Within two standard deviations (which is the convention for moral certainty in finance) all major coastal cities including New York, London and Tokyo are threatened by Tsunami like events.

The truth is, given what we already know as fact no amount of scientific discovery or data is going to move those curves enough to the right (your left) to justify doing nothing in the timeframe we have to act. Although when I say “the truth” to scientists, (given their natural skepticism and training,) they look at me like they want to know where I was when those crop circles were showing up. When it comes to action the scientist constant search for the absolute truth can be a double edged sword;

- advancing the cause of mankind while at the same time
- being used as an easy excuse for policymakers for why they haven’t actually done anything, (yet).

We continually hear we need to wait till all the evidence is in “before we act”. In business if we took that approach we’d be out of business or out of a job to be sure. We succeed or fail by making decisions based upon educated points of view of what we expect will happen.

In the case of greenhouse gases which stay in the atmosphere for decades waiting till all facts are in is an impossible and utterly ridiculous standard. It’s the equivalent of bleeding out every orifice of your body and hearing your doctor say “before we rush to judgment, let’s wait till all the facts are in” (meaning your autopsy). The only alternative to good risk management is crisis management.

As the great statistician, Maurice Kendell, once wrote “humanity did not take control of society out of the realm of Divine Providence to put it at the mercy of the laws of chance.”

The third attack is to argue that nothing can be done anyway. Even repeating that gives it more credibility than it deserves. In the power sector alone, the opportunities are enormous.

For example, we have been aggressive in promoting and instituting public benefit funds that can be used for things like weatherizing poor people’s homes or helping families in

need pay their energy bills. This is heresy to most market proponents. But, consider the merit of public benefits funds relative to three inter-related goals the government should be very concerned with.

- National Security
- Economic Growth
- Environmental Needs

The housing stock in many areas is so poor it is creating a dead weight economic loss to society. A one mill (1/10 of one cent) adder per Kwh to fund this program would “cost” the typical residential customer \$1 per month.

Putting that money to productive uses (like weatherization) would eliminate enormous waste in the energy sector and every year the program is in effect would:

- Reduce energy needs – the equivalent of shutting down 50 power plants
- Reduce environmental emissions the equivalent of taking 1 million cars off the roads; and ... save society \$7 billion a year (a payback of 7:1).

It eliminates waste and gives people more money to spend productively on

- education
- healthcare or,
- goods and services that will expand the economy.

It’s a winner under all three of our criteria. Public benefits may be a hard pill for market proponents to swallow, but they work.

Second, consider an equally divisive issue for environmentalists –nuclear power.

Consider the fact the next generation of plants will be cooled by helium and operate at extremely high temperatures (1000° C) then through a thermo chemical process split water into oxygen and pure hydrogen. You get emission free electricity and emission free hydrogen which can be used for fuel cells or to replace carbon based fuel in other sectors like transportation. Just by adding 5% hydrogen to gasoline you can lower emissions by 30-40%. Or, how about another two for one.

Louisiana is the Saudi Arabia of Pet Coke. Pet Coke is a waste product of the refinery process and about as cheap as you can get for fuel.

First, utilizing a 30 year-old proven technology add water and oxygen to gasify the Pet Coke. Then inject more water to get CO2 and (basically) hydrogen. The CO2 is injected into existing oil and gas wells to enhance recovery and then the remaining CO2 stored permanently under the cap rock. The remaining hydrogen goes to the turbine to produce power.

You start out with a dirty waste product and end up with virtually, emission free electricity and more oil and natural gas as a by product of the sequestering process.

For Louisiana, this could be the next big thing. We have

- the cheap fuel to start the process (about 24 million tons of Pet Coke supply per year)
- the geological formations to support sequestering and
- the stranded oil and gas reserves to make this an economic boom.

Louisiana has about 50 years of unrecovered oil supply (2 billion barrels) that is both technically and economically feasible to get through (and only through) an enhanced oil recovery process.

You can think of that as a by product of sequestering the carbon, OR, You can think of sequestering the carbon as a by-product of getting the oil. Point is, the list of what can be done is limitless and it's not all cost as some would suggest. Once the markets know what the environment regulations are going to be, you can expect an exhaustive menu of efficient solutions that we can't even predict today.

The fourth alternative to action is to simply, "shoot the messenger." In business we are obliged to follow certain rules of conduct. Post-Enron Sarbanes/Oxley legislation requires the CEO and CFO to sign certifications regarding internal controls of the books and records.

If, for example, I edited or censured the reports of subordinates, or created an atmosphere of fear or reprisal for things I didn't want to hear or I didn't want the market to hear with regard to "risk" (not just facts but uncertainties) then I could be looking at 20 year prison term.

Yet, we hear those same practices or allegations of such as routine in government.

We hear various agencies (including the EPA) having their reports edited by non experts or being censored on what they can say.

Just two weeks ago, U.S. Fish and Wildlife officials in Alaska issued an order barring government scientists from speaking about global warming melting sea ice or the endangerment to polar bears.

Last year, the Administration apparently rescinded an order that NASA scientists not discuss global warming.

In business we do not have those freedoms. We have fiduciary obligations to fairly inform our shareholders of the risks even when all the facts are not available. If government wants to act more like business then a good place to start would be to follow the same policy, inform the people they represent of the risks, then let them decide.

Which brings me to another critical issue where government has created a freedom for itself that no business has. Every publicly held business in America keeps its books and

records on accrual basis under a set of strict rules. On the other hand, the federal government reports its results of operations and financial condition on cash basis.

Officially, that means the government is running a deficit (say) \$300 billion in 2005 and has a total debt of (say) \$5 trillion.

On accrual basis (like every business keeps its books) those numbers are more like a \$3 trillion deficit for 2006 and total debt (funded and unfunded) close to \$50 trillion not \$5 trillion.

The differences: little things like the present value of obligations for social security, medicare, federal employees, and veterans' benefits.

This is straight out of the U.S. Treasurer's own report. It's like footnotes to the financial statements. Now if you know you have to fund another \$45 trillion debt sometime down the road, you might be a bit paranoid also.

Particularly if scientists are saying we have to deal with Climate Change and economists are saying it's gonna hurt.

In business, we try to maintain financial headroom to cover two two sigma adverse events.

The more financial risk (or debt) we have, the less business risk we can take on and the more important it is to practice good risk management.

The federal government has relied upon the ability to print money for so long, they have lost track of the fact even that has limits.

In the 60's, General Motors was so powerful it was said to believe there were no problems so big money cannot solve and "we have all the money in the world".

Now retirees healthcare and pensions and foreign competition has changed that. In 2005, GM lost \$10 billion.

Carbon legislation is seen as only adding to those problems. Sounds a lot like the issues facing the U.S. government.

But, before we start stuffing our money in a mattress instead of the local bank or the stock market let's put climate change in perspective.

Yes, there will be some cost for risk management of climate change. But cost of doing nothing (crisis management) could be 5-20% GDP every day. The cost of risk management might be 1-2% of GDP.

Said another way, 50 years from now the economy will be 6 months or so behind where it otherwise would be, only slightly slower growth (barely noticeable).

An incredibly cheap hedge against the potential catastrophic economic and human consequences of doing nothing. Particularly when you consider the real debt is more like \$50 trillion not \$5 trillion.

Seems like a no brainer unless you're talking to today's voters who seem comforted with the argument that "Climate Change is only a theory." So why do anything?

In layman's language, a theory is no more than a guess.

Of course, to scientists, theories are structures of ideas that explain and interpret the facts.

As the climate is an open complex system where we cannot isolate all possible variables, we will never have the comfort of laws.

To scientists, gravity is only a theory. Einstein's theory replaced Newton's. But no one was floating in space in the meantime.

While it is true that scientists continue to debate the theory of Climate Change, that is a sign of intellectual health; the natural scientific skepticism that has driven the world's progress since the dawn of man.

As Stephen Jay Gould once said: "If we ever begin to suppress our search to understand nature, to quench our intellectual excitement in a misguided effort to present a unified front where it does not and should not exist, then we are truly lost."

That same kind of intellectual debate is what created this nation's governing document, our constitution, the greatest document ever written. The nation's founders all agreed that we were creating a republic but they found it difficult to agree as to what kind of republic best suited the challenges they faced.

James Madison warned "the public good" the real welfare of the great body of the people is the supreme object to be pursued and no form of government has any value if this is not its ultimate objective.

Madison was strong in his belief that this can work solely as long as the people (the voters) will have the intelligence good sense to recognize and select men of virtue and wisdom to represent them.

After 200 years of the great experiment in "American Democracy" Richard Nixon concluded something quite different. He observed "people react to fear, not love." That principle underlies much of contemporary political campaigning; tapping into our insecurities and guilts.

Nixon had some experience in this area. Having been a prominent figure in the McCarthy era serving on the House Unamerican Committee before becoming Vice President and then turning on McCarthy. (Live by the sword, die...)

Many of you recall the play and award winning movie “Inherit the Wind”. Inherit the Wind is supposedly a highly fictional account of 1925 Scopes Monkey Trial.

Despite numerous similarities between the movie and history the movie was never intended to be about creationism vs. evolution.

It was a warning about the evils of McCarthyism. It has been hailed for its theme of freedom of speech and freedom of thought.

The title of the play comes from Proverbs 11:29 in the King James Bible. “He that troubleth his own house shall inherit the wind: and the fool shall be servant to the wise of heart.”

The play included a reminder that “Inherit the Wind” is not history. “It might have been yesterday but it could be tomorrow.” In many respects, it feels like today. We are bringing trouble on our own house.

1. Guinea pigs in the greatest scientific experiment ever and
2. Potentially sowing the seeds of self destruction of the greatest experiment ever in democratic rule.

Without action to avert climate change our children could literally “inherit the wind”.

A dust bowl howling across the nation’s mid-section or a Gulf Coast eroded by hurricanes of an intensity never imagined and extreme weather threatening the population centers in the east and west coast along with most of the nation’s wealth.

Any actions to discourage or inhibit research on Climate Change put at risk the very scientific progress that may ultimately save us. But just as importantly it risks eroding the values and principles that the founding fathers established and that have distinguished this country from all who came before us and sustained us when all else have failed. Unlike the citizens of most other nations, Americans have always been united less by a shared past than by shared dreams of a better future. Not just for ourselves but for our children. Someone observed if we lose that we lose the glue that binds us together regardless of race gender or national origin.

We become a nation that has reached the end of the line. The citizen has become the “economic man”. The state, no more than a policeman keeping us from each others throat. Admittedly, that’s a hypothesis (or maybe just a guess).

But imagine, if Climate Change is left unchecked, and

- GDP is reduced by 5-20% per year
- catastrophic events become the norm across the nation and

- the federal government hasn't solved the current \$50 trillion "fiscal exposure." Who do you think will get whatever limited money there is for storm protection or reconstruction?

I can give you any number of examples today to improve your hypothesis. Like LIHEAP federal money for emergency assistance to help low income citizens pay their energy bills. The formula is not even close. The north is "entitled" to their portion. The south has fought an often times "uncivil war" for every dollar. Last year was the first time in 20 years the South got its fair share.

When the 9/11 attacks occurred on New York the damage to the electrical system was around \$100 per customer. The federal government stepped in to pay it. Later, when Katrina hit New Orleans the damage was \$9,000 per customer. We were told. "It's against federal policy to provide assistance." (I'd love to see how that policy is worded.) We are already being told if a Category 3 hurricane hits New York it will cripple the U.S. economy. You can guess where that's headed. As James Madison feared, when he argued for a strong central government, Climate Change (just like slavery did before it) could pit region against region.

To avoid that Americans have to become more involved electing our leaders. American citizens have an enormous responsibility that cannot be avoided in our form of government. As a republic and not a true democracy, it allows our leaders to act on our behalf.

At times we have inspired the world and saved it from destruction. But it will only continue to be effective if we also hold our leaders accountable.

Most fundamental is accountable for the truth. For a model, we need look no further than the scientific community that has endured considerable criticism on subject of climate change but has maintained a steadfast commitment to intellectual honesty over decades of research.

We will know we are on the same track that created the greatest nation in history, when our leaders

- stop pandering to us;
- stop making promises they cannot keep;
- start campaigning on the issues and not each others character flaws;
- start practicing risk management instead of condemning future generations to one potential crisis after another;
- pose the difficult questions that challenge our own assumptions;
- when they make the decisions that are in the best long-term interest of the country, but may contradict our own immediate desires or more narrow point of view.

It's not over dramatizing the issue to say we have more a lot more at risk than the climate. It could well be the ultimate test of whether we are one nation or merely a nation of many states.

I don't know if you've seen the movie "Signs." Double meaning, sign of things to come or alien signs in corn field. (You knew I was coming back to the crop circles some time.)

But it's the story of a broken man (Mel Gibson) and his family who are faced with what increasingly seems to be their last day on earth. There is a growing set of facts that suggest the planet is being attacked by aliens and their isolated farmhouse is soon to be overrun. Mel Gibson is the father, a former minister who turned away from his faith when his wife was taken in a one in a million accident. He is haunted by the memories of her dying moments and her calm (but incoherent) last thoughts as the circuits in her brain randomly fire due to lack of oxygen and blood.

His two young children are also victims of rare illnesses. His brother (Merrill) now lives with them to help support the grief stricken father. His brother is a former professional baseball player. Labeled as destined to become the "Best There Ever Was." Hit tape measure home runs but never made the Majors because he swung hard; at everything. The locals deride him for wasting his career with strikeouts. When all he had to do was lay off those pitches. His response is simply: "It just felt wrong not to swing."

In the movie (as the family prepares for their last day) Merrill (the ex-ballplayer) looks to his older brother (the ex-minister) for comfort. He asks him if he thinks this is the end and his older brother says, "Yes." He asks, "What comfort they can take to the end?" The older brother says, "There are two types of people." "The first, when something good happens they consider it more than luck or coincidence. It's a sign. Evidence that someone (higher power) is looking out for them. Whatever happens, someone will be there." "It fills them with hope." "The second group sees it as just pure luck. Happy turn of chance. Everything is 50/50. Could be bad. Could be good. Feel whatever happens you're on your own. That fills them with fear."

"You have to ask yourself what type of person are you? Do you see signs, see miracles? Or do you just believe people get lucky?" The movie offers an exaggerated perspective of life; seemingly isolated events in a longer-term more meaningful context. Each (long-shot) unfortunate incident or trait of each character taken together results in a miracle the families savior.

I feel Katrina is a sign. You can think of it as either a sign from beyond or just a chance event. But none the less, it's a sign of what the future may hold. Like coastal erosion, it will be years before we can stabilize our environment even if we act now.

For Louisiana it gives us an opportunity to prepare, a 50-year head start.

If we don't adapt now, we will most certainly be abandoned or be abandoning later. We won't get a second chance to get it right. It will require making hard choices.

Are you for a sustainable climate more than against restrictions on where you can build or what you can build?

Are you for clean air more than against restrictions on what you can drive mass transportation mandated energy efficiency measures or public programs to weatherize low income housing?

Are you for affordable sustainable energy and the economic development that goes with it more than against say nuclear power (and any technical concern on waste disposal) or sequestering CO₂ (and technical concerns of whether it's 100% effective).

Are you for assuring you leave your children and grandchildren the same or better opportunities that we were given more than you are against the cost of providing "insurance" to avoid what "might be?" No one person is responsible for healing the wounds of the world. But we each Must do our part.

In the movie Signs in the final confrontation the family has no resources, no hope until final words of the wife and mother, spoken months earlier, as she passed away, flashes through the father's head as if a message from the beyond. "Tell Merrill, to swing away."

I encourage all of you to decide what you are for and then do the same.