

Climate Change: The Opportunity of a Lifetime

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In January of 2007, I went to Nashville and met Al Gore and was trained to deliver the Inconvenient Truth presentation. I give tremendous credit to Mr. Gore for the impact he has had in outlining the problem. However, after nearly two decades in the field, I have come to believe that, while global climate change does involve some inconvenient truths, it also holds tremendous opportunities.

In fact, I believe climate change is one of the greatest opportunities America has ever seen. The combined specter of climate change and dangerous dependence on foreign oil gives us urgent reasons to restore the environment, build a stronger, more resilient economy and create a more peaceful world.

Our current fossil fuel based energy system is threatening our environmental life support systems. At the same time, our nation is now importing over 60% of our oil, much of it from politically unstable regions in the Middle East and Africa. We are nearing \$10 trillion in national debt and China, the chief funder of that debt, has become the second largest importer of oil, right behind us.

Chances are pretty good that if we were to sit down and create an ideal energy system from scratch it wouldn't look like the one we have now! However, it's important, and hopeful, to realize a fossil based system *did* make sense when it was created. At the turn of the 19th century America was facing some big challenges. We were lucky if we lived to be 40. We couldn't grow food very well. And, we had great difficulty getting the metals, minerals and resources needed to advance our technologies.

Then, in 1859, we discovered oil in Titusville Pennsylvania and this rich energy source solved many of these problems. Using petroleum based fertilizers, and newly created motorized farm equipment like tractors and harvesters, we started growing thousands of times more food than we had before. Motorized boats enabled us to catch more fish to feed more people. New, innovative mechanized equipment enabled us to mine the metals and minerals we needed to move into an industrial age. Petroleum based plastics brought great advancements in medicine, transportation and communications technologies.

These phenomenal innovations enabled our numbers to grow from approximately 25 million people in 1859 to 300 million today. Average life expectancy has nearly doubled to 80 years. These are incredible successes.

Oil provided a vehicle for America to unleash our productivity and take our pioneering spirit to scale, all the way to the moon and back for that matter. Unfortunately, along the way, we developed an economic system that emits staggering amounts of carbon dioxide into the atmosphere, far more than any other nation to date. The truth is global climate change is the unforeseen and unintended consequence of America's economic success.

As Americans, we shouldn't beat ourselves up for this success. When oil was discovered, phones, cars and televisions hadn't even yet been thought of. The people who tapped the first wells couldn't have imagined a globally connected economy with millions of cars and planes and spacecraft. They couldn't have imagined our world population would go from 1 billion to 6.5 billion in just 15 decades. They also couldn't have imagined the unintended new problems that would come along with our fossil fuel consumption. Problems like climate change.

Fossil fuels made sense at the time. They no longer do. It is time to rekindle those best of American traits – innovation, pioneering creativity and idealism grounded in commitment and hard work – to make the rapid transition to a post-fossil fuel, low carbon economy.

We have the necessary resources to do it:

- Solar: every hour the Earth receives enough energy from the sun to supply more than ten times the electricity needs of all of humanity.
- Geothermal: the heat in the upper six miles of Earth's crust has 50,000 times more energy than all the world's oil and gas reserves combined.
- Wind: the winds in Oregon, North Dakota and Texas alone are enough to satisfy our national electricity needs.
- Transportation: plug in hybrid cars are capable of going about 50 miles using no gasoline at all and overall gets around 100 miles per gallon. Big breakthroughs are happening in passenger and freight rail efficiency.

Already some of the early stepping stones on the road to a post fossil fuel economy are being laid. The wind, solar, hydrogen and biofuels sector reached \$55.4 billion in 2006, making them larger than the international music industry. These four are projected to be \$226 billion by 2016. Economists expect that energy efficiency products, those things that help us use energy more efficiently no matter its source, will likely generate even larger revenues. It's estimated that right here in the U.S. renewable energy and energy efficiency currently generates \$970 billion in revenue and could be as high as \$4.5 trillion by 2030.

Yet, despite the specter of climate change and the obvious economic opportunities in the clean energy industry, as a nation we are not moving nearly fast enough. Each American produces many times more carbon than people anywhere else on the planet. Our demand for oil continues to grow. Renewable energy accounts for only about six percent of America's energy consumption.

Why? Why are we stuck here, moving so slowly toward a lucrative solution?

It comes down to three reasons: One, we only recently reached the point where we can see that the damage caused by fossil fuels outweighs their very real benefits. Two, only in the past couple of decades have renewable energy technologies have become

advanced enough to replace fossil fuels. And, three, there are now a lot of stakeholders invested in the status quo.

These stakeholders include the automobile industry; oil and gas production companies; utilities; those who operate and maintain pipelines and transmission grids; not to mention consumers with an appetite for fossil fuel and deeply ingrained in a driving culture – like you and me.

When any proposal to change the system is put forward these stakeholders become advocates for or against a new energy system based on how they think it will impact them economically in the short term. Due to this fear, these competing economic interests have effectively blocked any serious consideration of a solution to a problem that poses a clear and present danger to our nation.

How then can we create strategies to accelerate the transition to a sustainable future? First we need to acknowledge that today there are millions of people whose jobs depend on the current fossil fuel based economy and nobody wants to lose their job. Similarly, millions of people drive inefficient cars and are simply not going to give them up without an alternative that doesn't put them deeper into debt. And, people still have to heat their homes and if they can't afford to convert to solar they'll continue to use coal or natural gas. Finally, there is a lot of trapped equity in our current energy system; in coal plants, natural gas plants, the transmission grid; in our extensive highway infrastructure and in the global transportation network which moves fossil fuel around the world. Nobody is just going to just walk away from all that.

The challenge is to acknowledge the very real economic interests involved and find ways to make this transition while keeping *everyone's* livelihoods intact. And this is doable!

The skills required to drill for geothermal resources are similar to those needed by oil well drillers. The expertise needed to run a clean bio-energy turbine is the same as that of a coal turbine operator. The skills needed to manufacture solar panels are very similar to those required to manufacture inefficient SUVs.

Our grandparents and great parents built the infrastructure we currently enjoy – the highway system, the transmission grid, the oil wells and coal plants. Now, we need to lay down the infrastructure of the future.

This is our watch. And our responsibility is to create a post-fossil fuel, low carbon economy. If we decide to suck it up and get it done, we could make the transition to a post-fossil fuel economy in twenty years.

As mentioned above we have more than enough renewable energy resources to replace coal and oil. What we need is a unified commitment similar to what we had during World War II. When the US decided to enter the war, we literally re-wired our economy to meet the challenge. Auto makers became airplane and tank makers.

Housewives became machinists. A carousel manufacturer converted to making spark plugs. Everybody made money. Everybody had jobs. And in three years time we ended the war.

We have a once in a lifetime opportunity before us. To seize it, we must once again think of ourselves as citizens rather than just consumers. It is easy to feel powerless as individuals in America right now. Our political system is of, for and by the lobbyists. Mega corporations are turning record profits while they pollute our skies, rivers and oceans and as it gets harder and harder for regular people to pay our bills and dig out of debt. But now, more than ever, is the time to recognize corporations and governments are made up of individuals and individuals can reshape them to reflect the values that we hold dear and that once made America great – values such as responsibility, innovation and willingness to take risks for bold dreams.

We have a responsibility to solve this problem and seize this opportunity. This is really where and when we make our legacy. We can leave our kids with a mess, or with a restored, healthy environment and a much more secure, abundant economy.

If we act boldly and use our imaginations and drive to turn challenges into opportunity. We *can* restore our environment *and* create prosperous 21st century economies in the United States and Europe, even in the Middle East and Africa.

I believe it is genuinely amazing to be alive during such an important and transformative time.

We have an opportunity to lend our creativity and will to the groundswell that is rising up to simultaneously solve the climate crisis and create enormous economic opportunity. This is our chance to protect and restore this beautiful blue planet that sustains us and to give our kids and grandkids a shot at a healthy, peaceful life, full of opportunity. This is our chance to achieve something truly great.

And we CAN do it.