

Global American South – Beyond the Sunbelt Conference, 4/14/08

Consider this: Our species, Homo sapiens, has been around for roughly 150,000 years. When I was born, 55 years ago, there were 2.6 billion of us on the planet. Today there are 6.9 billion, and if I live to be 100, there will be close to 9 billion people on the planet - from 2.6 to 9.0 billion in 100 years. Today roughly 1 billion people live a western life style. Fifty years from now, some predict that there will be over 3 billion people living like we do. Given the resource and planetary limits we now face, something has got to change.

This realization is not new, Simon Dresner, in The Principles of Sustainability, links it directly to the birth of the sustainability movement in the early 1970's. Starting in 1972, a series of conferences were held bringing together environmentalists from the West and leaders of the developing world. The environmentalists focused on pollution and the need to curtail development and growth. The leaders of the developing countries regarded environmental concerns as a luxury of the rich, arguing, as India's Indira Gandhi put it, "Poverty is the worst pollution."

The concept of a "sustainable society" first emerged at a conference convened by the World Council of Churches in 1974. Their definition of a sustainable society began with the concept that "social stability cannot be obtained without an equitable distribution of what is in short supply."

In 1982 a German economist named Siebert, introduced the concept of "environmental space". He pointed to the interdependence of the economy and the environment noting that environmental limits limit the economy. He focused on 1) limits to the earth's ability to regenerate resources, and 2) limits to the earth's capacity to absorb human pollution. He called these limits the "environmental utilization space" or simply environmental space.

In 1983, the UN set up the World Commission on the Environment and Development resulting in the "Brundtland Report" published in 1987. The report

noted that many present development trends leave increasing numbers of people poor and vulnerable, while at the same time degrading the environment. They saw the need for a new path that sustained human progress not just in a few places for a few years, but for the entire planet into the distant future. The commission called this new path “sustainable development” defined as “development which meets the needs of the present without compromising the ability of future generations to meet their own needs.” They made the case that sustainable development is a matter of equity both between and within generations, putting social equity and generational equity (a new concept) at the heart of the sustainability movement.

They argued that extreme poverty often forced people to practice destructive activities for short term survival, making poverty a sustainability issue. They suggested that sustainability implies meeting the needs of all people; they embraced Siebert’s concept of limits both of environmental resources and the ability of the biosphere to absorb the effects of human activities.. And they pointed to the interdependence of the economy and the environment, noting that a healthy economy requires a healthy environment.

In 1992 the concept of environmental space was explicitly linked to sustainable development by Friends of the Earth Netherlands. They related a country’s environmental space to the world’s environmental space by relating a country’s population to the world’s population. In raising this issue they pointed to the overuse of environmental space in the West and the need for the West to severely limit its unrelenting consumption of resources. Americans make up 4% of the population, yet we consume over 30% of the world’s resources – or 7 times our environmental space.

In 1999, Natural Capitalism, by Paul Hawken and Amory Lovins, suggested a new way forward modeled on Nature with new values and new ways of doing business. They called for a new industrial revolution that values Natural Capital, and fosters innovation to radically increase the productivity of natural resources. They defined Natural Capital as 1) the resources we use – air, water, minerals, oil, trees, fish, and

so on..., and 2) the earth's living systems including: rivers, wetlands, grasslands, savannas, oceans, tundra, and rainforests. They argued that these resources and the services they provide have immense economic value. For example, the earth's rainforests convert carbon dioxide to oxygen, a critical natural service with significant economic value, equal one could argue to the capital cost of replacing this service with man-made alternatives. They went on to argue that these replacement costs should be reflected in the price of the products we buy and on the balance sheets of the businesses that produce them.

So what does this new industrial revolution look like? To answer this question, it is useful to look back at what we call the first industrial revolution. The industrial revolution that began in the 18th century produced revolutionary change in the production and distribution of goods. Machines powered by water, coal, oil, and eventually electricity accelerated rapidly the work formerly performed entirely by laborers, and work that took 150 workers in 1770 could be done by a single spinner in a British textile mill by 1812. This huge change was made possible by innovation and ingenuity which radically increased the productivity of labor and our capacity to convert natural resources into useful products.

This is the success and legacy of the industrial revolution. As a result, more was produced and more was consumed, a middle class emerged, and standards of living improved, all good things in the 20th century. But these improvements, it is now clear, came with some negative consequences – global climate change, the alarming acceleration in the extinction of species - Tom Friedman compares our time to the time of Noah, and the over harvesting and polluting of the world's oceans to name a few. To mitigate these consequences we need to turn the 18th century industrial revolution on its head. We now need, instead of huge increases in labor productivity, a new industrial revolution that radically increases in the productivity of natural resources.

So there you have it – the sustainability movement calls for a revolution in the way we use our natural resources. It calls for the fair and responsible use of the earth's

resources, taking into account the planetary limits now clear after 50 years unprecedented growth. Our challenge is to define these planetary limits and figure out how to live within these limits in a way that cares for all life on the planet. For some this may be overwhelming, even too big to grasp, but for the American economy it holds tremendous promise.

This challenge presents huge opportunities for the business sector.. President Clinton said, at last November's Greenbuild conference that not since WWII has America been presented with the economic opportunity that this movement represents. Thomas Friedman, author of the World is Flat, calls it the perfect storm of global warming, global flattening and global crowding and suggests the solution, the solution is in America's sweet spot, in America's wheel house, and our opportunity to get our "groove" back.

Let's go back to those population statistics. Today roughly 1 billion people live a western life style, and that number is expected to triple to over 3 billion in the next 50 years. That is 2 billion new consumers, tripling the number of people with the capacity to buy our products and services. But in order to satisfy this demand we need to make a few changes – and herein are the huge opportunities.

First, we need a clean, carbon free source of energy. Second, until this new energy source is brought to scale, we need to encourage the efficient use of the energy we currently produce. And third, as described above, we need a new industrial revolution that radically increases the productivity of natural resources. All three are attainable, and sooner rather than later, with smart government policy that encourages investment and innovation today - today before we run out of oil and deplete our natural resources.

This is my message – We need smart government policy that focuses the power of the free market system on three key issues: 1) energy conservation and efficiency, 2) clean, carbon free energy, and 3) a new industrial revolution that radically increases the productivity of natural resources.

Fred Krupp, in Earth: The Sequel published earlier this year, goes into great detail about the innovative work now in motion to develop new, clean sources of energy. Scientists, entrepreneurs, and venture capitalists are exploring new possibilities in solar energy, biofuels, ocean energy, and geothermal energy from the earth. Some are working with existing technologies; some with technologies that will require significant breakthroughs to hit pay dirt. The one thing missing is what Thomas Friedman calls a price signal. Some of you may have heard him speak in February at the Emerging Issues Forum in Raleigh about his new book Green – the New Red, White and Blue. He said, “I am an innovation guy.” We don’t get there without innovative breakthroughs the likes of those in the semiconductor industry over the past 30 years, and to foster that innovation we need a price signal from the government. And his preference - a carbon cap-and-trade program.

Robert F, Kennedy Jr. agrees. In the third annual green issue of Vanity Fair, just out, Robert Kennedy authors an article titled “The Next President’s First Task – A Manifesto”. He says “There are a number of things the new president should immediately do to hasten the approaching boon in energy innovation. A carbon cap-and-trade system designed to put downward pressure on carbon emission is quite simply a no-brainer. Already endorsed by Senators McCain, Clinton and Obama, such a system would measure national carbon emissions and create a market to auction emission credits. The supply of credits is then reduced each year to meet pre-determined carbon-reduction targets. As supply tightens, credit value increases, providing rich monetary rewards for innovators who reduce carbon emissions.”

And Krupp, in Earth: The Sequel agrees. The government, Krupp argues, must impose a price for emitting carbon into the atmosphere. He suggests, like Friedman and Kennedy, a carbon cap-and-trade program. A cap-and-trade program is the insurance investors need against a drop in oil prices, as we saw in the 1980s that undercut the cost competitiveness of alternative energy investments. Once this is in

place venture capital will fuel innovation, the markets will sort out the most promising technologies, and businesses looking for profits will do the rest.

So first we need a carbon cap-and-trade program to foster innovation and development of a carbon free source of energy.

Second, because it will take some time for a cap-and-trade program to bear fruit, we need smart government policy that will encourage energy conservation and efficiency. The population of North Carolina is projected to grow 5% per year over the next 20 years, increasing from 9 million citizens to 13 million by 2030. Duke Energy has plans to build a new coal-fired power plant at their Cliffside Station. Progress Energy is considering a new nuclear power plant. Both see the need for more generating capacity quickly approaching.

But there is an alternative – using the energy we currently generate more efficiently. I spoke recently with Dr. George Everett, Director of Environmental and Legislative Affairs for Duke Energy. He said that with the right regulatory structure utilities like Duke Energy, instead of investing in new generating capacity, could invest in helping their customers use the energy they consume more efficiently. Utilities, like all companies, are in business to make money. Under the current regulatory structure, they make money by selling energy, and the more energy they sell the more money they make. What is needed is a regulatory framework that allows them to make money improving efficiency in the homes and businesses they serve. Amory Lovins calls this “producing negawatts” and points to evidence that “producing negawatts” is much cheaper than producing megawatts. I will give you two examples:

I am a partner in Greenbridge Developments; we are building a mixed-use green building in downtown Chapel Hill. It will have 35,000 square feet of commercial space and 98 condominiums. It is designed to maximize natural daylighting and its energy systems will be 30% more efficient than existing code requirements and 50% more efficient than the existing building stock in the area.

A second example, I bought a house in 2005, a rental property that was built in the 1960's. I put insulation in the attic, closed in the crawl space, put double-pane glass in the skylights, and replaced the 20 year old furnace with a new highly efficient one. The result - a 40% decrease in the energy consumption. I made similar changes to my current residence, built in 1985, and cut energy consumption by 25%.

I did this because I could afford the upfront costs – payback is roughly 10 years out. But the majority of Americans can not. What is needed therefore is smart government policy that allows the utility to make the investment and earn returns similar to the returns they earn building new generating capacity. There is a bill in front the North Carolina General Assembly, Senate Bill 3 that is a step in the right direction. One purpose of the bill is to promote energy efficiency by creating a framework for utilities to help their customers do some of the things I described above. This bill and others like it on a national scale have the potential to reduce significantly the need for new generating capacity without compromising what we do or how we live.

So second, we need a regulatory structure that allows utilities to make money helping their customers use energy more efficiently.

Third, we need to radically increase the productivity of natural resources. We need a new industrial revolution that does for resources what the 18th century industrial revolution did for labor. Paul Hawken and Amory Lovins in Natural Capitalism point to huge untapped potential to improve resource use efficiencies with the widespread adoption of existing technologies. In 1996 Amory Lovins published Factor Four, arguing that energy and resource efficiencies could be quadrupled with existing technology, backing up this statement with 50 examples from around the world for reducing energy and materials intensity.

Bill McDonough, in his book Cradle to Cradle, calls for closed-loop production systems, where every output is either returned harmlessly to the ecosystem as a nutrient, like compost, or becomes an input for another manufacturing process. Bill likes to say “design is the first sign of human intention, and in good human design, like in nature, waste equals food.” His book itself is an example.. While it looks like it is made of paper, it is actually made with a synthetic material designed to be recycled and re-used again, and again and again - from cradle to cradle to cradle.

Another example is the shift from the current business model to a “service-and-flow” business model. Our current model rests on the sale of goods. In the new model, value is instead delivered as a continuous flow of services—such as providing flooring services instead of selling carpet. Interface, one of the largest manufacturing companies in the US, is experimenting with “renting” carpet. They install it and maintain ownership. When it wears out, they replace it with new carpet and take the old carpet back to the factory to be re-made into new carpet. Knowing they are going to get it back, they design for disassembly - that is they design with the ability to easily separate the backing from the pile. The backing becomes feed stock for new backing and the pile, feed stock for new pile. Instead of going to a land fill after 5 to 10 years, the resources are used over and over and over again, drastically increasing their productivity.

In Germany they have Take Back laws requiring companies to take back their products when they wear out. Xerox calls this asset recovery, mining old parts for use in new machines.

These examples are the tip of the new industrial iceberg. What is needed is smart government policy to speed up the transition. The Clinton Administration in the mid-1990s introduced carbon tax legislation but it failed to get through Congress with the main opposition coming from industry sectors that saw eco-taxes as a threat to their future.

Ecological tax reform, while similar to a carbon tax, is much more ambitious. ETR suggests a fundamental change to our economic system by reducing and eventually eliminating taxes on labor and instead taxing the use of energy and natural resources. Since the industrial revolution much of the innovation has been aimed at increasing labor productivity. In the West workers are highly productive, highly paid, and highly taxed.. Yet most forms of energy and raw material inputs are taxed lightly if taxed at all. The result is a built-in bias in the tax system, promoting the abuse of natural resources.

Ecological tax reform became popular in the late 1990's among Green parties in Europe and was tried in Germany, England and Denmark with limited success. ETR, if set up well, is fiscally neutral meaning it does not increase taxes. Rather it shifts the basis for taxes from labor to the use of resources. Even so there are winners and losers, not unlike the current regulatory structure. Unfortunately under the current structure, the biggest losers may well be our planet and it's future inhabitants.

In closing, we need smart government policy that focuses the power of the market on three key issues: 1) energy conservation and efficiency; 2) clean, carbon free energy; and 3) a new industrial revolution that radically increases the productivity of natural resources. This is going to happen, the demand is too great for it not to happen and with the help of some bold, visionary politicians, we can make it happen in America and in the great state of North Carolina.