Hot, Flat, and Crowded

By Thomas Friedman

I. Where We Are

We have become a "subprime nation" that thinks it can just borrow its way to prosperity. As with our houses, so with our country: We have been mortgaging our future rather than investing in it.

While our parents left us an America much wealthier and healthier than the one that was passed on to them, our generation seems determined to pass on to our children a downwardly mobile America.

We are entering a new era***: The Energy-Climate Era***. We are experiencing the convergence of global warming, global flattening, and global crowding. The convergence of these factors is the most important dynamic shaping the world we live in today.

This book focuses on five key problems that a hot, flat, and crowded is dramatically intensifying. They are:

- The growing demand for ever scarcer energy supplies and natural resources;
- A massive transfer of wealth to oil-rich countries and their petrodictators;
- Disruptive climate change;
- Energy poverty, which creates a sharp divide between the electrical haves and electrical have-nots;
- The rapidly accelerating biodiversity loss, as plants and animals go extinct at record rates.

Crowded: Today there are 6.7 billion people sharing the planet. By 2050 estimates point to a world population of more than 9 billion. That's a 40-45% increase – and most of that growth is likely to occur in countries least able to sustain it. This situation will likely fuel instability and extremism.

Flat: Several factors have leveled the global economic playing field and have enabled people around the world to participate and, in the best cases, to enter the middle class. These factors include the proliferation of the personal computer; the internet; and the collapse of communism and the fall of the Berlin wall. This is stoking an unprecedented competition for energy, minerals, water, and forest products as rising nations pursue prosperity and economic security for more and more people.

Hot: Global average temperatures have experienced natural shifts throughout human history. However, scientists studying the rapid rise in global temperatures during the late 20th century say that natural variability cannot account for what is happening now. The new factor is the human factor – our vastly increased emissions of carbon dioxide and other greenhouse gases from burning of fossil fuels such as coal and oil, as well as deforestation, large-scale cattle grazing, agriculture, and industrialization.

Royal Dutch Shell's 2008 energy scenario predicts that global consumption of all forms of energy will at least double between now and 2050, because of the combination of population growth and greater wealth driven by the globalization of markets.

How we handle these five key problems will determine whether we have environmental, economic, and human disaster, or peace and security, economic growth, and human rights in the coming years.

II. Green is the New Red, White, and Blue

The ability to develop clean power and energy efficient-technologies is going to become ***the*** defining measure of a countries economic standing, environmental health, energy security, and national security over the next fifty years.

The green economy is poised to be the mother of all markets, the economic investment opportunity of a lifetime, because it has become so fundamental.

Leading a green technology revolution would go a long way toward restoring our moral authority in the world. A country cannot go really green without being committed to the idea that there is something bigger then itself, its own community, and its own borders – that the state of the world really matters too.

What is required is a clean energy system that enables ordinary people to do extraordinary things – in terms of generating clean electrons, steadily improving our overall energy and resource efficiency, and promoting an ethic of conservation. This is our biggest challenge because only such a system will enable us to grow as a world economy – not only without exacerbating energy supply and demand issues, petrodictatorship, climate change, biodiversity loss, and energy poverty, but while actually reducing them at the same time. If you don't have a system, you don't have a solution.

III: Components of a system: moving forward

- Integrated government policies – laws and standards, taxes and credits, incentives and mandates, minimums and maximums – to guide and stimulate the marketplace to drive innovation further, to commercialize new ideas faster, and bring this revolution to life sooner.
- Energy internet: computerized system that integrates all of your energy, communications, and entertainment devices and services. These are connected with a smart grid that coordinates energy resources and services nationally.
- Abundant, clean, reliable, and cheap electrons to feed into that smart grid and create a complete clean energy system – from the power plant, to the transmission line to your home and business, to your car.
- The energy system will require transformational innovation
- We need a market for clean energy. We could make existing clean energy technologies so much cheaper and effective if we created the market pull that would demand their production all over the country
- Price signals: making clean energy competitive by lowering the cost, imposing a carbon tax, increasing gasoline tax, renewal energy mandates and incentives
- Electrifying transportation, and moving as many cars, trucks, buses, and trains away from exclusively combustion engines and into plug-in electric cars, and gasoline-electric hybrids.
- A global strategy for the preservation of our forests, oceans, rivers, and endangered biodiversity hot spots, to enable smart growth that doesn't destroy our natural world
- Generation and preservation go together – both are necessary if we want growth to be sustainable
- It takes an ecosystem of the right government policies, the right investments, and the right actors to save an ecosystem of plants, animals, and forests.
- All conservation is local. Each ecosystem for preservation will be different, depending on the country and the place that needs protection.
- No ecosystem to promote a healthier environment will survive for long without better educated people.
- Local conservation systems need to be supported by global financing

Code Green: The best way to re-energize America, rebuild its self-confidence and moral authority, and propel it forward as a society is by focusing on a green agenda.

IV: China and America

Because of China's huge population and fast growing economy, China is now the world's biggest emitter of carbon, the second-largest importer of oil and they world's largest importer of nickel, copper, aluminum, steel, coal, and iron ore. As China goes, so goes planet earth.

Two crucial questions: 1) Can America really lead a real green revolution? And 2) Can China really follow?

America has a decisive role to play. It can help tip China in the right direction, but only if we go first. In the Cold War there was a winner and a loser, but in the earth race either we will all win or we will all lose!

The American system of democracy, special interests, and lobbyist, makes it difficult to make big decisions during peacetime. For all the talk about the energy issue, the United States seems to have no sense of urgency and we are sleepwalking into the future.

So how can I make a difference? First, pay attention and personally lead as environmentally sustainable a life as you can. Make sure your environmental awareness and behavior is always a work in progress. Second, it is much more important to change your leaders than your light bulbs.

Leadership: Whenever you face a big challenge, like ending segregation or fighting a world war, the quality of leadership is often the deciding factor. In the case of the Energy-Climate Era, we need leaders who can shape the issues so that people understand why ignoring them is such a threat and why rising to them is such an opportunity. We also need leaders who not only understand the importance of dealing with this problem in a systematic way, but who can actually generate the vision and authority to pull that system together.

The decisions Americans make about sustainable development are decisions about who we are, what we value, what kind of world we live in, and how we want to be remembered.