

BUILDING AN ECOLOGICAL CIVILIZATION

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We are in the midst of an epochal transition in human civilization. A new civilization, an ecological civilization, is emerging out of industrial business as usual.

Our century, the 21st century, offers the opportunity for humanity to build day by day, place by place, an ecological civilization—a world that is sustainable, prosperous, peaceful, harmonious, and just for all, not just for the fortunate fraction of people who are affluent. A sustainable world cannot be divided between the polluting rich minority and a desperate, poor majority.

An ecological civilization will mean a global convergence upon sustainable norms for all in energy, emissions, water, and other resources. This process of convergence will help us build sustainability's global infrastructure, transfer resources and knowledge from rich to poor, and establish the economic framework for enduring prosperity. Convergence is not a matter of charity. A sustainable convergence will make us all better-off, and expand global wealth, trade and social contacts many fold.

Ecological civilization means that economic growth results in ecological improvement. There is a decoupling of economic growth from pollution, depletion, and ecological damage. Market rules and the price system send signals for sustainability through ecological consumption taxation and related means to shape consumption, production, and investment decisions. Sustainable goods and services become more profitable and gain market share while polluters scramble to catch up.

We can build, if we choose to, a global civilization characterized by efficient renewable energy technologies, by industrial ecology with zero waste and zero pollution, and by sustainable agriculture, forestry and aquaculture. In ecological civilization, there is no limit to trade in information in a renewably powered cyberspace and cultural exchange is a must.

This is a transition that cannot wait for consensus decisions from United Nations climate conferences. An ecological civilization will arise as an expression of a global movement for change. It can and must be undertaken on all levels, by the firm, the family, the neighborhood, the city, the region, the nation and beyond.

It will occur through simultaneous global movements for climate justice, for building an efficient renewable energy infrastructure, for new market rules making the price system send clear signals for sustainability, and for an overall improvement in efficiency and decrease in waste by orders of magnitude. We must all be involved in these movements, they demand our participation and our skills.

Our fundamental challenges are not technical, rather they concern the will to change. We have the tools and we have the knowledge, but do we have the political and civic will? An ecological civilization cannot be built by privileging established industries and imposing restraint upon newly developing sustainable industries, or by exempting the wealthy from bearing a fair share of the cost of change.

The enormous and self-destructive powers of industrial development are beguiling and terrifying. If we continue to follow this path the profit will be short-term and in the long-term there will be ruin. To all appearances, we have subdued and humbled nature. But that is an illusion. If we continue to fell the forests, pour poison into the air, water, and soil, sweep the sea of fish, drain the aquifers, obliterate wild habitat, change the climate, and acidify the ocean, we will bring about a tidal wave of death and destruction.

We have a choice between ecological civilization and a future characterized by deepening ecological catastrophe, of drought and flood, of famine, war, epidemic, mass migration of the desperate, of collapsed states, and a world of ghost cities of Peking, New York, Paris, Rio, Johannesburg, Mumbai—some submerged, others home to desperate millions.

So, let us agree, there is an absolute necessity for action, which brings us to the question how do we move from an industrial present to an ecological civilization?

A prevailing view is that nations and firms that go first in taking fundamental steps toward sustainability will be at a disadvantage, and another is that the transition away from fossil fuels and high pollution will be a net cost. Let me illustrate the benefits of leading this transition by focusing on energy, my area of expertise and a critical area to be addressed in the ecological transformation.

The trillions spent on fossil fuels and the trillions of dollars of waste and pollution associated with it represents an enormous opportunity for driving the global efficient renewable energy transformation and the industrial ecology revolution. How can it still be called “economic” to mine more-and-more-expensive-and-difficult-and-unsafe-to-obtain fossil fuels, endure the wildly fluctuating prices of fossil fuels, spend trillions on infrastructure to produce and burn them, and pass on the high costs of air, soil and water pollution related to fossil fuels to the public?

What rational business case can be made for continue in this way if it can be shown that savings can be extracted from the trillions spent on fossil fuels and infrastructure sufficient to build a zero-fuel-cost, zero-polluting, and sustainable future.

The transition to efficient production and storage of renewable energy on a continental scale, can economically and effectively meet all our energy needs. And this transition can be financed largely through the use of market-based mechanisms that mine the savings obtained through performance contracting, and from the higher efficiency of renewable energy production as it comes on line.

Here are four ways to drive a twenty-year global energy transformation:

First, require over twenty years both an increasing percentage of renewable generation and efficiency to replace polluting generation, and a decreasing amount of allowable emissions from coal. Coal must be ecologically benign or stay in the ground. All fossil fuel subsidies should be eliminated or re-directed to zero-emissions development.

A means for increasing renewable generation and efficiency is to use advanced energy performance contracting (AEPC) on a utility scale to finance mass retrofits on city wide and regional scale. In AEPC there is competitive bidding for suppliers to deliver energy efficiency (i.e. "nega-watts") and renewable energy. Consumers are charged a portion of their energy savings to pay for the contracts.

Second, impose severance taxes on all energy (renewable and non-renewable) to build permanent sovereign funds for global investment in sustainable development.

Third, establish a sustainable per capita, annual global energy allowance of 70 gigajoules (19,443 KWh) of primary energy and three tons of CO₂. Those who consume above the allowance will pay a small tax on their utility bills to be invested in sustainable energy development for the poor. These "Sustainability Assessments to Value the Ecosphere" (SAVE) can be administered by the UN.

Fourth, establish a global organization, the "Global Initiative for Climate Cooling" (GICC), to focus on developing and implementing mechanisms and market rules to facilitate investments in alternative energy. An example of an innovative mechanism is a renewable energy hedges where a renewable energy provider obtains an assured price for delivering power, and the user obtains an assured price for buying power, in each case, over a long period.

In conclusion, we face a fundamental choice between building a sustainable ecological civilization or continue on the path to self-destruction. The time to choose is now. It's time to stand up to preserve our heritage and protect our futures.