

Green Reads

Note to Readers: Submit your own brief review about a book that has the potential to help people live healthier, more balanced lives to editor@pcmfloida.com. We will feature select reviews in future editions. The following is provided by the Earth Policy Institute (www.earthpolicy.org).

Plan B 3.0: Mobilizing to Save Civilization

"In late summer 2007, reports of ice melting were coming at a frenetic pace. Experts were 'stunned' when an area of Arctic sea ice almost twice the size of Britain disappeared in a single week," writes Lester R. Brown in his new book, *Plan B 3.0: Mobilizing to Save Civilization*.

"Nearby, the Greenland ice sheet was melting so fast that huge chunks of ice weighing several billion tons were breaking off and sliding into the sea, triggering minor earthquakes," notes Brown, President and Founder of the Earth Policy Institute, a Washington, D.C.-based independent environmental research organization.

"We need not go beyond ice melting to see that civilization is in trouble. Business-as-usual is no longer a viable option. It is time for Plan B," Brown says in *Plan B 3.0*, which was produced with major funding from the Farview, Lannan, Summit, and Wallace Genetic foundations, the U.N. Population Fund, Fred and Alice Stanback, and Andrew Stevenson.

"*Plan B 3.0* is a comprehensive plan for reversing the trends that are fast undermining our future. Its four overriding goals are to stabilize climate, stabilize population, eradicate poverty, and restore the earth's damaged ecosystems," says Brown. "Failure to reach any one of these goals will likely mean failure to reach the others as well."

"Even as the accumulating backlog of unresolved problems is leading to a breakdown of governments in weaker states, new stresses are emerging. Among these are rising oil prices as the world approaches peak oil, rising food prices as an ever-larger share of the U.S. grain harvest is converted into fuel for cars, and the spreading fallout from climate change.

"At the heart of the climate-stabilizing initiative cited above is a detailed plan to cut carbon dioxide emissions 80 percent by 2020 in order to hold the future temperature rise to a minimum. This initiative has three major components: raising energy efficiency, developing renewable sources of energy, and expanding the earth's tree cover. Reaching these goals will mean the world can phase out all coal-fired power plants."

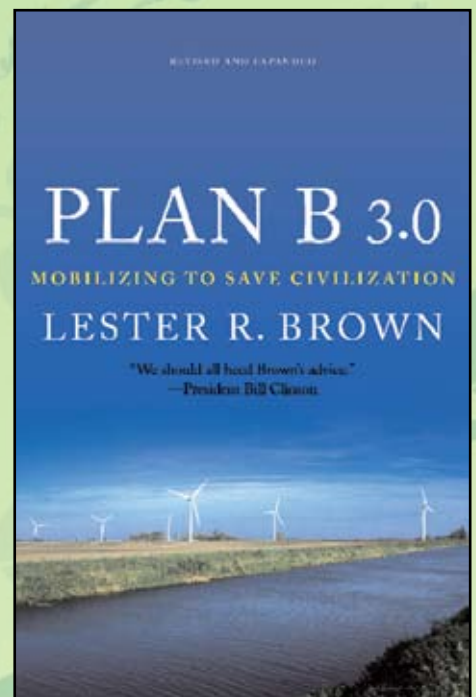
In setting the carbon reduction goals for Plan B, we did not ask, "What do politicians think is politically feasible?" but rather, "What do we think is needed to prevent irreversible climate change?" This is not Plan A: business as usual. This is Plan B: an all-out response at wartime speed proportionate to the magnitude of the threats facing civilization.

"We are in a race between tipping points in natural and political systems," says Brown. "Which will come first? Can we mobilize the political will to phase out coal-fired power plants before the melting of the Greenland ice sheet becomes irreversible? Can we halt deforestation in the Amazon basin before it so weakens the forest that it becomes vulnerable to fire and is destroyed? Can we cut carbon emissions fast enough to save the Himalayan glaciers that feed the major rivers of Asia?"

Although efforts have been made in recent decades to raise the efficiency of energy use, the potential is still largely untapped. For example, one easy and profitable way to cut carbon emissions worldwide is simply to replace incandescent bulbs with compact fluorescent bulbs that use only a fourth as much electricity. Turning to more efficient lighting can reduce world electricity use by 12 percent—enough to close 705 of the world's 2,370 coal-fired power plants.

In the United States, buildings—commercial and residential—account for close to 40 percent of carbon emissions. Retrofitting an existing building typically can cut energy use by 20 to 50 percent. The next step, shifting to carbon-free electricity to heat, cool, and light the building completes the transformation to a zero-carbon emissions building.

We can also reduce carbon emissions by moving down the food chain. The energy used to provide the typical American diet and that used for personal transportation are roughly equal. A plant-based diet requires about one fourth as much energy as a diet rich in red meat. The reduction in carbon emissions in shifting from a red meat-rich diet to a plant-based diet is about the same as that in shifting from a



Chevrolet Suburban SUV to a Toyota Prius hybrid car.

In the Plan B energy economy, wind is the centerpiece. It is abundant, low cost, and widely distributed; it scales easily and can be developed quickly. The goal is to develop at wartime speed 3 million megawatts of wind-generating capacity by 2020, enough to meet 40 percent of the world's electricity needs. This would require 1.5 million wind turbines of 2 megawatts each. These turbines could be produced on assembly lines by reopening closed automobile plants, much as bombers were assembled in auto plants during World War II.

In the development of renewable energy resources, Brown notes, we are seeing the emergence of some big-time thinking—thinking that recognizes the urgency of moving away from fossil fuels. Nowhere is this more evident than in Texas, where the state government is coordinating an effort to build 23,000 megawatts of wind-generating capacity (the equivalent of 23 coal-fired power plants). This will supply enough electricity to satisfy the residential needs of over 11 million Texans—half the state's population. Oil wells go dry and coal seams run out, but the earth's wind resources cannot be depleted.

Solar technologies also provide exciting opportunities for getting us off the carbon treadmill. Sales of solar-electric panels are doubling every two years. Rooftop solar water heaters are spreading fast in Europe and China. In China, some 40 million homes now get their hot water from rooftop solar heaters. The plan is to nearly triple this to 110 million homes by 2020, supplying hot water to 380 million Chinese.

Large-scale solar thermal power plants

are under construction or planned in California, Florida, Spain, and Algeria. Algeria, a leading world oil exporter, is planning to develop 6,000 megawatts of solar-thermal electric-generating capacity, which it will feed into the European grid via an under-sea cable. The electricity generated from this single project is enough to supply the residential needs of a country the size of Switzerland.

Investment in geothermal energy for both heating and power generation is also growing fast, notes Brown. Iceland now heats nearly 90 percent of its homes with geothermal energy, virtually eliminating the use of coal for home heating. The Philippines gets 25 percent of its electricity from geothermal power plants. The United States has 61 geothermal projects under way in the geothermally rich western states.

The combination of gas-electric hybrid cars and advanced-design wind turbines has set the stage for the evolution of an entirely new automotive fuel economy. If the battery storage of the typical hybrid car is doubled and a plug-in capacity is added so that batteries can be recharged at night, we could do our short-distance driving—commuting to work, grocery shopping, and so on—almost entirely with cheap, wind-generated electricity.

This would permit us to run our cars largely on renewable electricity—and at the gasoline-equivalent cost of less than \$1 per gallon. Several major automakers are coming to market with plug-in hybrids or electric cars.

With business as usual (Plan A), the environmental trends that are undermining our future will continue. More and more states will fail until civilization itself begins to unravel. "Time is our scarcest resource. We are crossing natural thresholds that we cannot see and violating deadlines that we do not recognize," says Brown. "These deadlines are set by nature. Nature is the timekeeper, but we cannot see the clock."

The key to restructuring the world energy economy is to get the market to tell the environmental truth by incorporating into prices the indirect costs of burning fossil fuels, such as climate disruption and air pollution. To do this, we propose adopting a carbon tax that will reflect these indirect costs and offsetting it by lowering income taxes. We propose a worldwide carbon tax to be phased in at \$20 per ton each year between 2008 and 2020, stabilizing at \$240 per ton. This initiative, which would be offset at every step with a reduction in income taxes, would simultaneously discourage fossil fuel use and encourage investment in renewable sources of energy.

"Saving civilization is not a spectator sport," says Brown. "We have reached a point in the deteriorating relationship between us and the earth's natural systems where we all have to become political activists. Every day counts. We all have a stake in civilization's survival."

"We can all make lifestyle changes, but unless we restructure the economy and do it quickly, we will almost certainly fail. We need to persuade our elected representatives and national leaders to support the environmental tax restructuring and other changes outlined in *Plan B*. Beyond this, each of us can pick

an issue that is important to us at the local level, such as phasing out coal-fired power plants, shifting to more-efficient light bulbs, or developing a comprehensive local recycling program, and get to work on it."

We all need to educate ourselves on environmental issues. For its part, the Earth Policy Institute is making *Plan B 3.0* available for downloading free of charge from its website, www.earthpolicy.org.

"It is decision time," says Brown. "Like earlier civilizations that got into environmental trouble, we have to make a choice. We can stay with business as usual and watch our economy decline and our civilization unravel, or we can adopt Plan B and be the generation that mobilizes to save civilization. Our generation will make the decision, but it will affect life on earth for all generations to come."

After earning a degree in agricultural science from Rutgers University in 1955, author Lester Brown spent six months living in rural India, where he became intimately familiar with the food/population issue. In 1959, he joined the U.S. Department of Agriculture's Foreign Agricultural Service as an international agricultural analyst. He then earned master's degrees in agricultural economics and public administration. He was an adviser to Secretary of Agriculture Orville Freeman on foreign agricultural policy but then left government to help establish the Overseas Development Council. In 1974, with support of the Rockefeller Brothers Fund, Lester founded the Worldwatch Institute, devoted to the analysis of global environmental issues.

Brown has authored or coauthored over 50 books. In May 2001, he founded the Earth Policy Institute to provide a vision and a road map for achieving an environmentally sustainable economy. His most recent book is *Plan B 3.0: Mobilizing to Save Civilization*, which is available for free downloading at www.earthpolicy.org/books/pb3/index.htm.

