

# **Cool The Earth, Save the Economy:**

## **Solving the Climate Crisis is EASY<sup>1</sup>**

### **EXECUTIVE SUMMARY**

#### **Global Warming and Its Consequences:**

**Increasing levels of anthropogenic greenhouse warming gases, primarily carbon dioxide (CO<sub>2</sub>) but also methane, are warming the planet enough to cause significant present changes:**

- **Melting glaciers, ice sheets and polar caps;**
- **Acidification of the ocean due to increased CO<sub>2</sub> absorption;**
- **Coral reef destruction from overheating episodes;**
- **Destruction of temperate forests due to overwintering beetle infestations, and increased number and size of wildfires resulting from longer, warmer, drier seasons;**
- **Increasing frequency and intensity of drought and heat waves;**
- **Faster heating of polar regions.**

**Current models also predict further changes based on current and further warming, and on positive feedback from current and future changes to ecosystems:**

- **Increasing frequency and intensity of disruptive climatic events such as hurricanes, droughts, floods, and heat waves;**
- **Significant decreases in food and water supplies due to droughts, changing climate patterns, destruction of water-storing glaciers as water sources, and loss of fisheries resulting from increasing acidification and overheating;**
- **Acceleration of further warming due to methane release from melting tundra and continental shelf frozen methane deposits, destruction of forests, and release of CO<sub>2</sub> from warming soils;**

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<sup>1</sup> A book written by an award winning scientist, John Harte, and his biologist wife, Mary Ellen Harte, available as a free download at: [www.CoolTheEarth.US](http://www.CoolTheEarth.US) .

- Sea level rises of more than 1 meter by 2100, resulting in coastal inundation of human industrial and residential areas and disappearance of islands;
- Increased loss of biodiversity and tropical ecosystems due to climatic changes.

## **The EASY Plan: Technologies and Policies**

Global warming is a destructive process that is accelerating and becoming more destructive. Thus, urgent countermeasures are needed to slow and ultimately halt it as quickly and feasibly as possible. Components of any plan must be:

- available now;
- acceptable to most of the public;
- affordable.

The EASY plan meets this criteria, and if implemented will achieve a 75% reduction in current U.S. greenhouse gas emissions by 2030.

The plan has four major components:

**Energy efficiency** - achieve significant savings in energy use through more efficient appliances, home modifications (such as weatherization upgrades), and commercial, industrial, and manufacturing practices. The U.S. could save almost \$1 trillion over the next decade (2008 McKinsey Global Institute report.)

**Automotive efficiency** - use available technology to create cars and trucks that achieve a fleet average of 60 miles per gallon (mpg) of gas by 2030 through hybrid and electric plug-in technology; create energy efficient public transport systems, such as high speed rail within and between cities. SUVs could get 67 mpg if built with current hybrid technology and new advanced ultralight materials (eg, carbon fiber thermoplastic composites), according to energy expert Amory Lovins. Those who convert their hybrids to plug-in hybrids (via the nonprofit Calcars) are achieving 100 or more mpg.

**Solar, wind and geothermal technology** - for carbon-free, renewable energy sources. Install photovoltaic roof systems on all available roofs, build solar thermal plants in sunny areas, create wind farms throughout the main wind corridor of the central U.S. and off coasts, and build geothermal plants wherever feasible.

**Update the current national electrical grid into a “smart” grid, utilizing energy storage systems such as megabatteries, high voltage DC power lines, fly wheel storage technology, electric plug-in vehicle storage, and two-way information flow of energy usage and distribution.**

**About 30% of the projected 2030 total U.S. energy demand could be met by converting 2% of the land in Nevada, New Mexico and Arizona to solar thermal farms. The number of U.S. solar panel roof systems is exploding as the price plummets 60% or more with new tax incentives.<sup>1</sup> Plastic solar cells, organic solar concentrators and rapidly evolving solar thermal technology are rapidly making solar energy costs competitive with fossil fuels. U.S. wind energy market grew 78% in 2008, adding 17.3 megawatts of new wind energy capacity, and selling about half of all small wind turbines installed globally then.<sup>2</sup> China is rapidly accelerating wind energy development, promising 100 gigawatts of capacity by 2020, about a quarter of current total U.S. energy demand.<sup>3</sup>**

**You are part of the solution** - the sum of the incremental actions of all citizens can have a significant effect both through political influence and energy efficient behavior. This includes, through economic choices, forging an international policy that halts destruction of important carbon storage ecosystems, such as tropical rainforests and peat bogs. It also includes addressing overpopulation by asserting the reproductive rights of all women. This can be accomplished through developing a global program that provides contraceptive education and choices for all women.

**All of the above involve available, acceptable and affordable technologies. In fact, a cost/benefits analysis comparing the EASY plan to business-as-usual, based on conservative economic assumptions (Chapter 3), shows that the EASY plan will cost \$21.6 trillion, but doing nothing will cost \$22.1 trillion - i.e., the U.S. will save about \$0.5 trillion over the next 20 years if the US invests in the EASY plan now.**

**Other renewable energy sources or technological solutions not included in the EASY plan fail to meet one or more of the 3 criteria (availability, acceptability, affordability), or are significantly less efficient. They include:**

- Biofuels;**
- Expansion of nuclear energy;**
- Clean coal technology;**

- **Carbon sequestration;**
- **Geoengineering schemes.**

**National U.S. policies to implement the components include:**

- **Revising tax policy to reward clean-energy winners by redirecting some of the tax breaks for the wealthiest individuals and fossil fuel industrial profits toward tax breaks on the profits from the sale of clean energy and energy-efficient devices, allowing the market to choose the “winners”;**
- **Shifting energy subsidies from fossil fuels to clean energy, energy efficiency, electric grid expansion and mass transit;**
- **Regulating the energy efficiency of vehicles, appliances, and industry;**
- **Providing public land for solar and wind energy, grid expansion, and mass transit;**
- **Redirecting to clean energy some of the military spending for maintaining oil supplies in the Middle East;**
- **Developing transitional energy policies, such as a temporary shift from coal to natural gas usage while we develop clean renewable energy infrastructure, and retraining fossil fuel workers to work in the carbon-free energy industry.**

**Educating the public through the media and the presidential bully pulpit and then encouraging them to pressure Congress into creating these policies is a key part of this process.**

**Community level policies to implement the components include:**

- **Getting mayors and other community leaders to create and implement plans to significantly decrease energy use in their communities;**
- **Demand that their utilities provide an ever increasing percentage of community energy needs via carbon free energy sources;**
- **Encourage household clean energy generation through longterm loans, lending homeowners the financing up front needed to establish renewable carbon free energy sources (solar or wind) on their roofs.**

**Although investment in the change to a carbon free economy will be substantial, the rewards to our economy will be even more so,**

**both in terms of realized savings and job creation. Life will be different and better in many ways.**

**The main political challenges are:**

- **Overcoming the powerful vested interests of current energy sources;**
- **Convincing political leaders to act urgently and substantively, not incrementally, to address the climate crisis.**

**Global warming has serious consequences, if left unchecked. The U.S. can realize substantial economic savings by investing in an EASY plan to cut carbon dioxide emissions to 25% of current levels by 2030, using available, acceptable and affordable technologies and policies.**

- <sup>1</sup> Davidson, P. 2009. Prices for rooftop solar systems fall as supply grows. USA Today, January 23, 2009. [http://www.usatoday.com/money/industries/energy/environment/2009-01-12-solar-panels-glut\\_N.htm](http://www.usatoday.com/money/industries/energy/environment/2009-01-12-solar-panels-glut_N.htm) retrieved June 30, 2009.
- <sup>2</sup> Stimmel, R. and Seldon, S. 2009. AWEA reports 78% growth in 2008. May 28, 2009. American Wind Energy Association. [http://www.awea.org/newsroom/releases/AWEA\\_Reports\\_Small\\_Wind\\_Market\\_Growth\\_052809.html](http://www.awea.org/newsroom/releases/AWEA_Reports_Small_Wind_Market_Growth_052809.html) retrieved June 30, 2009.
- <sup>3</sup> Bu, K. 2009. Wind power makes strides in China. Reuters World Environment News, June 12, 2009. video: <http://planetark.org/wen/53375> retrieved June 30, 2009.