

## **UPDATE: IMMINENT IRREVERSIBLE DANGEROUS CLIMATE CHANGE** Dec. 2009

There is an urgent need to secure financing for the 2.8 million green buildings and 1.2 million sustainable products by 2015 to stop Irreversibility (*Creating an Economic Stimulus & Stopping Climate Credit Risk CMP, 2008*). This is underscored by the recent NASA information below.

Jim Hansen with NASA, the world's leading climate scientist, published an important new book *Storms of My Grandchildren. The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity* (Oct. 12, 2009). He states "[s]urvival of ice sheets and species both present 'nonlinear' problems--there is a danger that a tipping point can be passed, after which the dynamics of the system take over, with rapid changes that are out of humanity's control (p. 144)."

The book identifies key factors accelerating *tipping points*, making Irreversible Dangerous Climate Change even more Imminent:

**Increased Canadian Tar Sands Exploitation.** Approval of a pipeline from Canada to the US exploiting "horrendously polluting" (pp. 269, 276) Canadian tar sands which cause the most climate pollution.

**Increased Approval of New Coal Fired Power Plants Globally** (pp. 179, 183, 184, 189).

**Warming Causing Increased Methane Releases** from thawing permafrost and sea beds (p 236, 258, 274, 276). Methane has the highest global warming potential, greater than any other pollutant.

**Increased Ocean Acidification & Reduction of Ocean CO2 Assimilation.** "[C]arbon dioxide must be less than 350 ppm to avoid ocean acidification problems (p. 230) ... If the ability of the land or ocean to soak up carbon decreases, that could cause [climate change] to accelerate, which could amplify other [tipping points] (p. 276)." Current CO2 is 386 ppm at a Dangerous level and recent published, peer reviewed studies show that the southern most oceans have exceeded their CO2 assimilative capacity.

### **Increasing Imminence of Irreversibility & Its Cataclysmic Effects –**

- **Global Chaos.** "Continued growth of [climate pollution] in the near term" will result in out of control climate change: "Global chaos will ensue when increasingly violent storminess is combined with sea level rise of a meter or more (p. 275)."
- **Venus Syndrome.** Continuation of business as usual can lead to a "Venus Syndrome" replicating the climate change effects on Venus: "[As] the surface of Venus got hotter, water evaporated, and the strong greenhouse effect of water vapor amplified the warming. Eventually a 'runaway' greenhouse effect occurred, with the ocean boiling or evaporating into the atmosphere. The surface became so hot that all of the carbon dioxide was 'baked out' into the atmosphere (p. 225). ... So Venus had a runaway greenhouse effect. Could earth? Of course we know that it could (p. 226)."
- **Human & Species Extinction.** Business as usual "threatens not only the millions of species on the planet but also the survival of humanity itself---and the timetable is shorter than we thought (p. ix). ... [T]oday's climate is not terribly far from the runaway situation (p. 233) ... If the world does not make a dramatic shift in energy policies over the next few years, we may well pass the point of no return (p. 171)."