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NEWS from
THE INTERNATIONAL FORUM ON GLOBALIZATION
and
POST CARBON INSTITUTE

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“SEARCHING FOR A MIRACLE”

**SHOCKING NEW THINK TANK STUDY CONCLUDES:
“NO COMBINATION OF SUSTAINABLE ALTERNATIVE ENERGY
SYSTEMS CAN REPLACE FOSSIL FUELS”**

Future Viability of Industrial Society In Question

San Francisco, CA

An alarming new study jointly released by two prominent California-based environmental/economic think tanks, concludes that unrelenting energy limits, even among alternative energy systems, will make it impossible for the industrial system to continue operating at its present scale, beyond the next few decades. The report finds that the current race by industries and governments to develop new sustainable energy technologies that can replace ecologically harmful and rapidly depleting fossil fuel and nuclear technologies, will *not* prove sufficient, and that this will require substantial adjustments in many operating assumptions of modern society.

The new study is the first major analysis to utilize the new research tools of “full life cycle assessment” and “net energy ratios” (Energy Returned on Energy Invested, EROEI), to compare *all* currently proposed future scenarios for how industrial society can face its long term future.

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The report analyzes 18 of the most viable power production alternatives, from traditional fossil fuels and nuclear, through wind, solar, wave, geothermal, biomass, et. al. to identify their “net energy” ratios—the amount of energy that must be invested in them vs. the amount of energy they will be able to produce---as well as their environmental, social and geopolitical impacts. It also considers such important factors as resource and materials supply, resource location, transportation, waste disposal issues, and others to create a full life cycle picture of each technology’s impacts.

Searching for a Miracle was published by the **International Forum on Globalization (IFG)**, the San Francisco-based international think-tank, policy center, publisher, and campaign organization with participating networks on all continents. Joining IFG in producing the document is **Post Carbon Institute** a think tank based in northern California that works toward a transition to a more resilient, equitable, and sustainable world.

The principal author of the report is Richard Heinberg, Senior Fellow of Post Carbon Institute, and the best-selling author of such books as *The Party’s Over*, *PowerDown*, *the Oil Depletion Protocol*, *Peak Everything*, and *Blackout*. **The editor of the project--part of the IFG’s False Solutions program--is San Francisco author Jerry Mander, who is Founder and Distinguished Fellow of IFG.** His previous popular books on economics and technology include: *Four Arguments for the Elimination of Television*, *In the Absence of the Sacred*, *The Case Against the Global Economy*, and *Alternatives to Globalization*.

Following are a few of the main conclusions of this report:

◆ **As the world’s higher-quality fossil fuel reserves rapidly deplete, no combination of alternative energy sources is likely to be sufficient to sustain industrial society at its present scale.** Energy supply problems, perhaps severe, are likely during the coming decade, worsening as primary fuels become scarce and costly. Major adjustments will be required in industrial production and personal consumption; attention will need to be paid to stabilizing and reducing population levels over the long term.

◆ **Fossil fuels and high-quality uranium ores are depleting rapidly; world oil production may already have peaked.** Present expectations for new technological replacements are probably overly optimistic with regard to ecological sustainability, potential scale of development, and levels of “net energy” gain—i.e., the amount of energy actually yielded once energy inputs for the production process have been subtracted. Technologies such as “carbon capture and sequestration” and “4th generation” nuclear power remain largely hypothetical and may never be deployed on a large scale, while the prospects for oil shale, tar sands, and shale gas have been overstated to varying degrees.

◆ **Certain energy production systems suffer from low or negative net energy gain;** these include most biofuels, hydrogen systems, oil shale, tar sands, and biomass, some of which also present unacceptable environmental problems (as is also true of conventional fossil fuels and nuclear power). So far, the best prospects for large-scale production and net-energy performance remain wind energy and certain forms of solar, but these still face important limitations due to intermittency of supply, remoteness of the best resources, materials needed for large-scale deployment, and scale potential. Tidal and geothermal power—which can have high net-energy yield but suffer from a low potential energy production capacity—will prove marginally useful in a diverse future energy supply mix.

◆ **Limits to future energy supply are more dramatic if environmental impacts are considered—**including accelerating climate change, fresh water scarcity, destruction of food-growing lands, shortages of minerals, and threats to wildlife habitat.

◆ **Given the above, it is necessary to prepare societies for dramatic shifts in consumption and lifestyle expectations.** It will also be necessary to promote a new ethic of conservation throughout the industrial world. A sharp reversal of today's globalization of commercial activity—inherently wasteful for its transport energy needs—must be anticipated and facilitated, and government leaders must encourage a rapid evolution toward economies based on localism especially for essential needs such as food and energy. The study remarks that this is not necessarily a negative prospect, as some research shows that, once basic human needs are met, high material consumption levels do not correlate with high quality of life.

◆ **The emphasis by policy makers on growth as the central goal and measure of modern economies is no longer practical or viable,** as growth will be limited by both energy shortages and by society's inability to continue venting energy production and consumption wastes (principally, carbon dioxide) into the environment without catastrophic consequences. Standards for economic success must shift from gross metrics of economic activity, to more direct assessments of human well-being, equity, and the health of the natural world.

◆ **With energy supplies diminishing, raw material resources similarly depleting, and crises such as climate change rapidly advancing, the long-term goal of satisfying the needs of the world's poorest peoples—in their attempts to recover from centuries of colonialism, resource exploitation, and removal from traditional lands and economies—becomes ever more daunting.** Efforts at relieving poverty, both domestically and internationally, will require more equitable reallocation of existing real wealth.

◆ **These factors must all be taken very seriously by policy makers in all countries,** and by global institutions that have thus far failed to be realistic about what will be required to avoid future social and economic breakdowns and geopolitical crises, as countries and peoples compete for dwindling energy resources, raw materials, and agricultural space. While it is not yet too late to change course, the opportunities to avoid catastrophic economic, environmental, social, and political impacts are few and quickly dwindling.

For further information, or additional copies of the report, please contact the organizations below:

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