

FIVE MILLION SOLAR PANELS

A STIMULUS PLAN THAT WORKS

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ABSTRACT:

For a direct answer to our combined energy, climate change, and financial crises it is proposed that the U.S. government purchase and give ONE 150 watt photovoltaic (PV) panel each year to five million Americans as they reach a certain single year age such as ... 15 years old.

BACKGROUND:

Nine years ago in 2000, US oil imports exceeded twelve million barrels per day. By May 2005 world conventional oil production leveled off at about 75.5 million barrels per day. For the first time in the 150-year oil age, world oil production could no longer lead and accommodate steadily increasing energy demand and directly-dependent growth. As would be expected from basic economics, after 2005 the market price for oil quickly escalated to the \$70 per gallon level in 2006 and to twice that in 2008. Finally, world demand began to seriously destruct and the price of oil collapsed.

Now, starting in late 2008, world oil is temporarily in surplus although production is declining, either intentionally by cut-backs from surplus-producers(OPEC) or by geological reduction in countries that have clearly passed peak like Mexico, US, Russia, and Canada. We've passed the maximum level of conventional light crude oil production, and are now facing the terminal decline of all hydrocarbon liquids including non-conventional deep offshore oil, tar sands, natural gas liquids, and bio fuels. Sources which are not profitable at the \$30 to \$60 per barrel level can not scale back up, regardless of future price, since there is not sufficient wealth or energy input left in the global economy to support resumption of more difficult projects.

In 2006, the profligate out-flow of US wealth for imported oil approached one billion dollars per day. This hemorrhage left fewer dollars for other expenses which, in turn, terminated continued growth in the housing market. The collapse in home financing and construction leads us to the mess we're in. Growth and borrowing against future-expected growth CANNOT continue without the common thread of ever-increasing energy. Primarily, it is our century-long commitment to the terribly energy-wasting automobile that is driving us to an energy crisis. We are reluctant to accept this fact so we continue to try to find more oil, resume fossil-fueled car production, buy hybrids, substitute other finite fossil fuels, and bail out the financial markets. We are trying to stimulate the economy with factitious wealth borrowed against future growth which can no longer happen now that energy (led by oil at 40% of our total) is in terminal decline. And, we haven't even mentioned the ugly twin of the fossil fuel age; climate change

We need an ABOUT FACE in our thinking to focus on the only sustainable, scalable, energy-positive, clean-energy source; incoming solar power, specifically, photovoltaic (PV) for individual (distributed) use. Wind and concentrated solar are also in this category, but are more adaptable to utility-sized systems. Hydro, ocean power, and geothermal are severely site and scale limited. Nuclear is another finite-fuel dead end with added geopolitical concerns and storage problems

PROPOSAL:

We should sharply increase domestic production of solar PV by five million panels per year. This effort should be federally stimulated (subsidized) while there is still a less-expensive, fossil energy plateau to move from. The recently enacted stimulus bill gives broad reference to renewable energy but not in the specific way suggested here. In addition, most panels (and wind turbines) are now made overseas and do not help domestic manufacturing.

Approximately five million American teenagers turn fifteen (or another single-year age) each year. The cost to give each a birthday present of one 150 watt, 24 volt, 2 ½ ft. by 5 ft. PV panel would be about \$750.00 for a total of \$3.75 billion per year. This is a pittance compared to the cost of wars and financial bailouts for banks and automobile manufacturers. It is equivalent to about five days of US cash outflow to foreign sources of oil at \$60.00/barrel. The same program should continue in each subsequent year thus guaranteeing an expanding commitment to a sustainable, scalable energy source.

Each 150 Watt panel, at a US country-wide average load factor of 15%, could supply to its owner, 540 Watt hours a day. This is the equivalent energy and work-output of an adult servant (slave) working seven hours per day at 75 watts, 365 days per year over a panel life of up to fifty years without food, breaks, replacement, or complaint. What better gift could our government give a teenager to preempt a lifetime of drudgery after we've preempted his or her share of the world's original oil endowment?

This plan would immediately put Americans to work and stimulate true "green" economic growth in all related areas; including battery development, battery recycling, electric cars, electric farm power for food, charge controllers, inverters, and everything else related to a new, modern, solar-powered, electric economy.

Some will sell their panels. Some will have the incentive to learn about electricity. Some will have renewed hope and accumulate more panels for larger systems of 1000 watts and up. The result will simultaneously address the nexus of peak oil, climate change and the financial crisis in a positive and technically honest direction.

Presently in Maine, we have a company, National Semiconductor, that presumably has the skills and infrastructure to make PV panels. This company is now laying off workers who could be producing the energy equipment for a modern sustainable future. We should also ascertain and accumulate all the materials required for increased PV production across the country. We cannot wait until photovoltaic energy is economically competitive with fossil fuels. By then it will be too late and there will be no wealth left for the transition.

Photovoltaic panels are proven to be energy positive; that is, it takes only between one to two years of output energy to make a clone leaving another fifty years of surplus to support a limited modern lifestyle. Solar-electric energy is admittedly feeble compared to finite fuels for agricultural power, transportation, and manufacture of essential needs. But, the flick of a light switch or an electric motor are far better than nothing as we move into the post finite-fuel age.

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