

Can solar power solve our current energy woes?

Oh Sun, thou hast made the heavens that thou may rise therein. . . .

More than 3,000 years ago, those poetic lyrics to “Akhenaton’s Hymn” probably graced the Egyptian papyrus pop charts. The 18th dynasty Egyptian Pharaoh-author probably even taught them to his famous-in-death son, King Tut.

Since Antiquity, man has venerated the awesome and once thought inscrutable life-giving powers of celestial nuclear fusion we call the sun. Ninety three million miles away and over 98 percent of all the mass in the galaxy, the sun’s showering of heat and light has been the inseminating engine for almost all sources of energy.

It is the nature of nature to be smart and the sun’s motif operandi of nuclear fusion is no exception. Its power is unfathomable. Hydrogen is its principle fuel. Consider this; the amount of energy in 30 grams of hydrogen atoms fused into helium atoms is equivalent to burning hundreds of thousands of gallons of gasoline. In a multi-step process, the sun fuses 700 million tons of hydrogen into about 695 million tons of helium



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every second. In one minute, each square meter of mother earth that the sun smiles on receives one year’s energy demands.

The key is to harness and store it.

Ancient man focused glass to start fires; Greeks understood seasonal solar architecture and Romans pioneered winter greenhouses for year round produce. The 1700s saw the use of solar water heaters and expeditions into the hinterlands employed solar ovens. Photovoltaic cells converting light into electricity appeared in 1890 and were commercially viable by 1954.

As engineers broke assumptions and legislators brokered new tax incentives, efficiencies and costs improved thirtyfold. Solar power plants, which generate electricity from concentrated solar heat driving steam turbines, are coming on line internationally. Solar power is presently 1 percent of our national energy supply but invention and economic incentives have led to meteoric growth of solar technologies.

Nanotechnology “spray on” solar cells, circular photovoltaic cells, light concentrating mirrored arrays, harnessing the more ubiquitous non-visible energy-rich infrared spectrum of light and superior battery and storage techniques such as vanadium and fuel cells have led many experts to contend that large scale economic feasibility of solar energy is only a decade away.

Solar energy as part of a comprehensive national policy is a job and joules engine. Synergizing the genius of American know-how with capitalism will reap enormous rewards.

The potential pollution free, limitless renewable energy bounty to be had by harnessing the sun has its detractors with their own mythology. Here is the light of truth. Solar devices do not require more energy to manufacture than they produce in their lifetime. Solar manufacturing does not result in more net pollution.

Costs and efficiencies are rapidly improving and every solar application makes the next one cheaper unlike non renewable sources of energy. Finally, solar devices will work where you live as they are dependent on light and

not heat and soon, perhaps may even use non visible light.

Solar power is not a cure-all. Issues exist such as nighttime power and storage demands, manufacturing costs and theoretic aesthetic and perhaps ecosystem concerns about large arrays in some locales. But consider; if conventional fossil fuels are interrupted during natural disasters, quickly assembled solar concentrators and arrays could play a vital role for essential services.

Begging forgiveness from American poet and dramatist Edna St. Vincent Millay, her famous muse on life and how we live it was rather prescient. Our energy candle does burn at both ends. If we continue down our present dimly witted and dimly lit path, our . . . “Candle . . . will not last the night (despite) . . . its lovely light.”

King Tut’s dad’s respect for the power of the sun was a bright idea. So is solar energy.

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