

Solar Fire Vision

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Potential of Solar Concentration

The most important part of the energy mix of the future will be solar concentration. Over 50 % of the world's energy needs are thermal (possible closer to 100% depending on how you define need). And through sterling engines and high efficiency photo-voltaic cells, a solar concentrator also produce electricity.

The sun is the hottest object in the solar system, and solar concentration is the most efficient way to capture this energy. The sun provides us with 174 petawatts of solar energy, far more than the 16 terrawatts humanity uses today. However, for humanity to access this awesome power (0.05 % would be 87 terrawatts) requires not only a technical transformation but a cultural transformation.

For this evolution to occur, an open and simple solar concentration design is necessary for spontaneous construction all over the world. Company's pursuing patents for solar collectors themselves have fallen into a complexity trap. Since solar energy is free it is far simpler to simply add 5 percent more surface area of collector, than create machines too expensive to be commercially viable, at least for a first phase.

Need

Solar concentration is not the need itself, but only the basis to provide some need. It is these real needs, these applications of solar concentration, that is the future of solar thermal energy. The companies that can see into this future of tomorrow, can develop it today and be in a position to equip entire countries in a application of solar concentration before, during and after the peak in oil production.

However, for there to be a market for these applications, there must be a large amount of solar concentrators and technicians already in existence. For there to be solar collectors and technicians, there must be a simple and cost-effective solar collector and an open design which is easily maintained. Open design, standard building materials, local construction, is the least costly production method possible, and so the best strategy to ensure a massive simultaneous proliferation all over the world.

Open Design

Solar Fire concentration is so simple it cannot be patented. The Solar Fire concentrators were refused a patent because they were too simple. But it is precisely such a *too simple to be patented* solar collector that the world needs. To pursue a patent by adding frivolous complexity simply results in a design too limited in scope to fundamentally change the energy infrastructure of the world. For, a solar collector is not a consumer product but an energy infrastructure, and should be designed to last at least 30 years. The end user must be sure to be able to maintain the collector over that time.

Solar concentrators require moving parts and precisions, and regular maintenance and calibration to be cost effective. No single company could assure the maintenance of millions of solar concentrators around the world. Local companies or the end user will have to ultimately maintain any solar collector.

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The best way to assure this is through simple open design, proven standard building materials (such as steel, flat mirrors, resin/epoxy/polyurethane) which ensure longevity, low cost and easy maintenance.

The genius of Edison was realising an electrical infrastructure was necessary in order to sell the commercially viable light bulb he developed (others had already proved the basic electric bulb technique but so no application); so he toured the country to convince authorities to invest in such an infrastructure. It is no accident that history remembers him for inventing the light bulb and not the electricity infrastructure, for it was the light bulb that was visibly useful.

Conclusion

From large industrial systems to local and domestic systems, the companies and individuals that become the leaders in simple open source solar collector designs will naturally be the leaders in designing and producing the applications the user actually needs: from cooking, water heating, purification/distillation, space heating, food processing, fruit drying, and ceramics, to cement production, refrigeration, mechanical power, electricity and even metallurgy. Indeed, even photovoltaic cells work hand in hand with solar concentration.

The ultimate energy source of the world is the sun; a solar concentrator puts us in as direct contact with this energy source as possible, and so it is the most efficient way to use our energy source (and so makes it possible to avoid plundering nature for indirect solar energy). Where engineering creativity is required is in bridging the gap between the needs of users and the sun, based on the solar concentrator that may already be in place.

The vision of Solar Fire (replacing obsolete “combustion fire” with “solar fire”) is not simply to substitute renewable energy into the economy as it exists today, but to lead the way in laying the foundation of an entirely new economy.