solar-oven

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Electric Ship

Electric Ship: Solar Oven

This webpage QR code

Structured Data

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PDF Version of the webpage (first pages)

4/9/2024

The Advantages of Going Solar Thermal

Merging Solar Technologies

While solar pv (photovoltaic) panels are a great resource for stored power, consider solar thermal for a smaller point-of-use compact solution that delivers a cost effective solution.

Onboard, use electrical efficient induction stove top or hot plate, microwave, or Instant Pot pressure cooker. Cooking time is faster, less clean-up, and less heat in the galley (reduces air conditioning in the tropics). All these small electrical savings add up. You reduce generator time, or battery time if on solar.

Dump the propane usage and storage. It’s a heavy gas, which means it sinks into your bilge and can be explosive. It’s hard to get and expensive. Instead, get a solar oven, or an extra solar panel to drive an induction cooktop.

Using both solar pv as well as solar thermal, provide the maximum benefits for the best price. If you are staging in tropical locations, this can be as simple as a black painted hot water tank. More sophisticated systems include solar vacuum tubes which can provide stored heat at a more economical price than batteries.

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Solar Strategy

Goal: Provide energy from the Sun which is free and doesn't require that you're tethered to land-based hydrocarbon fuel sources.

1. Solar PV: The best primary power collection, storage, and delivery is solar photovoltaics. Panel costs are now very affordable with great portability (i.e. no fuel stops). Using light-weight Lithium batteries, you can now dump the legacy propane based cooking and heating.

2. Solar Thermal:
(a) Solar Reflector Oven: Used for decades, this basic devices work reliably and can be used for cooking everything from rice and beans, to bread. Can be used to heat water, and focuses mealtimes at the lowest glycemic index period of the day (multiple benefits).

(b) Solar Vacuum Tube: Primarily used for hot water, provides a excellent source of free heat.

3. Wood Fired Pizza Oven: Always have a back up. Having a small wood fired oven can provide hot water and delicious meals.

4. Survival: Acquire inflatable solar desalination units available for liferafts and other survival situations.

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Summary:

Solar ovens provide a power-free cooking choice. Limited to midday (sunshine) hours, you can extend cooking time by putting in solar thermal heat absorbers, such as lava rock, dark colored bricks, or a new innovative technology called Zeolite pellets. Pellets are heated, and then when water is applied, the heat is released (water boils). Harvesting plants for food daily does not require the use of refrigeration.

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