

Portable power source cleans water (w/ Video)

21 October 2010, by Miranda Marquit



Image source: The Essential Element

(PhysOrg.com) -- One of the challenges faced by millions of people around the world is access to clean drinking water. Additionally, during natural disasters, it can be difficult for stricken areas to have access to the power they need. One company, The Essential Element, hopes to provide what is needed with the help of Hydra, a portable device that is designed to purify water while powering a fuel cell that can be used to power communications devices and even offer fuel for a camp stove.

And all this runs on solar [power](#).

[IEEE Spectrum](#) reports on what can be done with the 2.88 kilowatts of power generated by Hydra's solar panel array:

According to Strizki, that is enough to do the following: power a 900-watt pump that draws water to and through the unit's self-cleaning filtration device, top off a bank of lead-acid gel batteries capable of storing 900 ampere-hours, and run an electrolyzer that splits enough water to fill a

0.37-cubic-meter propane tank with [hydrogen](#) pressurized to 140 000 kilograms per square meter.

Hydra is meant to be self-maintaining, and it is also designed to be packed away. That way, once a need in an area has been fulfilled, the solar panels can be folded down, and the whole device can be carted away without leaving an environmental impact. The device is also meant to be "smart": When the water filtration system senses that it is becoming ineffective, it begins back-flushing. Another advantage is that it comes with photovoltaic mats that can be plugged in for additional power.

If Hydra works as well as promised, it could be a real help in areas struck by catastrophe, as well as in other areas where power and clean water are in short supply.

More information: -- Willie D. Jones, "Portable Solar Power Plant Purifies Water, Makes Hydrogen," IEEE Spectrum (20 October 2010). Available online: spectrum.ieee.org/green-tech/solar-power/plant-purifies-water-makes-hydrogen

-- "Hydra Specifications," The Essential Element. Available online: theessentialelement.com/specifications/specifications

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APA citation: Portable power source cleans water (w/ Video) (2010, October 21) retrieved 28 September 2020 from <https://phys.org/news/2010-10-portable-power-source.html>

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