

Indoor candle device is designed to keep phones charged

July 17 2015, by Nancy Owano



An emergency generator for your phone at time of power outages? That's on offer in the form of a crowdfunded-campaign item called Candle Charger. It offers USB power when you need it, designed to keep phones souped up when the grid cannot. Two ingredients are involved: a candle and water, together behaving as a little indoor power plant for smartphones, to make sure you stay connected no matter what.

The device is from Stower. The company said the Candle Charger is an emergency preparedness product that you don't know if you need it until you really need it. Other alternatives are no alternatives under certain conditions. Batteries drain quickly; solar chargers can't help at night or indoors; hand cranks produce minimal power.

How it works: You put Candle Charger on a stand. You fill the device bath with water ("Water volume is 150ml. Refill as needed, approximately every 30 minutes".) You light the Stower candle below. You plug in an electronic device to charge.

The team said that the pictures which they show on the Kickstarter page are early production units, made with Stower's new manufacturing partner, PCH.

The Candle Charger contains two core pieces of technology: The first of two technologies underlying Candle Charger is a thermoelectric module, or Peltier cooler. They said that "Thermoelectric modules are semiconductor devices that convert temperature gradients – one side hot, one side cold – into electricity. The Candle Charger uses nontoxic bismuth telluride-based modules, which have been in mass production for over twenty years for scientific, refrigeration, and automotive industries."

The second technology at play is "The Stower smart circuit" that conditions the power coming from the module to match power requirements of the device being charged (e.g., a smartphone).

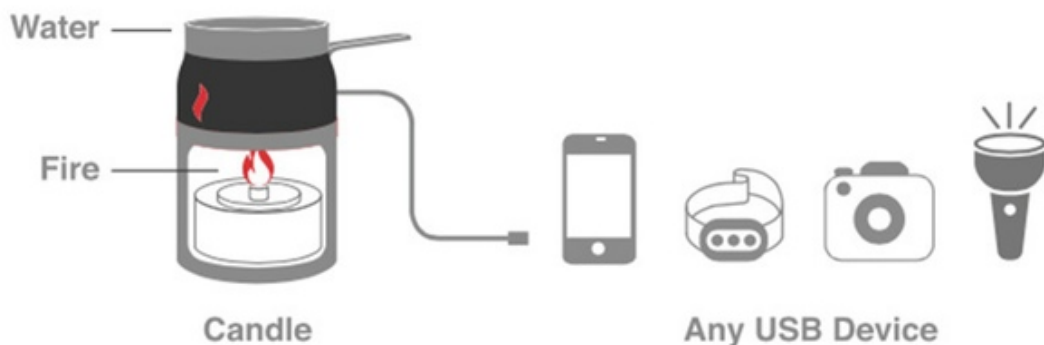
The San Francisco-based team is hoping for \$30,000 with 42 campaign days to go. At the time of this writing they had pledges totaling \$10,016.

A pledge of \$65 gets one Candle Charger with a six-hour candle.

Estimated delivery is December.

Will their concept work with any candle? They said two things to keep in mind are the height of the flame and size of the wick. They optimized their system for a specific type of candle which is to ship with the units and to sell in the same stores that they sell the Candle Charger – "so while the power might not be as high with other candles they will generate some power."

.Andy Byrnes, co-founder of the company, told John Brownlee in *Fast Company*, "We wanted to design something that was safe, more personal, and could be used [indoors](#), which is where the idea of building it around a candle came from."



Does it just work for phones? Their FAQ reply is that "The Candle Charger can charge any USB device that accepts 500 mA. This includes all smartphones, sat phones, flashlights, digital cameras, and most other

small USB devices. The Candle Charger does not charge tablets, laptops, or other large USB devices (many require a current greater than 2A, equivalent to 10 W)."

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