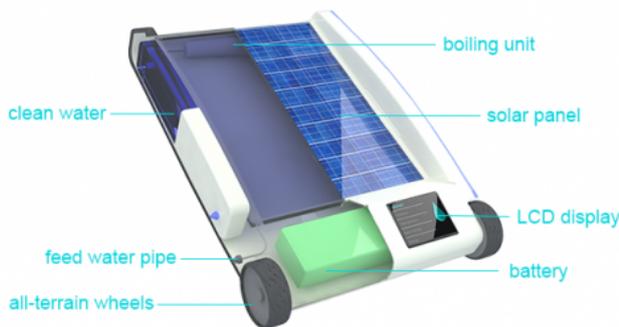


# Desolenator has tech for water independence, looks to 2015 (w/ Video)

5 December 2014, by Nancy Owano



(Phys.org) —What else is new: Earnest people who are aware of the difficulties very poor families face in many regions of the world wish for safe, cheap drinking water for everyone on the planet. The difference is that there is something new in a team who think that their Desolenator can actually deliver water for those in need.

"Today we estimate that there are over a billion people on the planet who don't have constant access to clean safe water. That's a billion too many." (Desolenator in a nutshell harnesses the power of the sun to convert seawater into drinking water.) The system purifies water from any source, including salt water. This is a solar-powered [water desalination](#) system. Desolenator will desalinate water at a lower cost per liter, they said, than any system at this scale available on the market today. But what about other drinking water and desalination technologies on the market? The Desolenator team said that existing solutions are not viable. CEO of Desolenator, William Janssen, said that "A massive 97 percent of the world's water is [salt water](#) and our plan is to tap into this valuable and available resource to disrupt the global water crisis in an unprecedented way. The

process is called desalination and today whilst 0.7 percent of the world's water comes from desalination, existing technology is expensive, inefficient and disproportionately drains 0.5 percent of the world's global energy supply."

They seek a way to transform sea water into drinking water in a sustainable way. The problem with large-scale desalination technologies is that the enormous plants require huge costs to set up and to run as well as vast amounts of energy powered by fossil fuels.

Matthew Peach, contributing editor of [optics.org](#) wrote about their system, and quoted Janssen in explaining just how it works: "What we have done is completely reverse-engineer the [solar](#) panel: we didn't cool it down; on the contrary, we insulated with double glazing and foam. So now the panel gets even hotter."

Through a combination of thermal, electrical and heat exchange, the result is pure clean drinking water through the power of the sun. Specifically, Desolenator maximizes the [solar radiation](#) that hits the surface area of the system to boil water to get a yield over 15 liters of water per day. Solar panels typically convert only about 15 to 18 percent of the solar radiation that hits them into energy, but Desolenator also harvests the heat that would otherwise be lost and directs this to heat the salt or polluted water. "The water heats to around 90 degrees, at which point we use the electrical energy from the solar panels to boil the water. We then run the steam through a heat exchange mechanism to heat the next batch of salt/[polluted water](#). We then have two outputs, pure [clean drinking water](#) and brine (which can be re-circulated through the system)."

They now seek funding to get their system developed and shipped. They have turned to Indiegogo to speed up product development. Among other various price offerings, they set \$450

as the pledge price for a Desolinator. Their goal is to raise \$150,000. They have assembled a working prototype. Some steps thus far have proved encouraging: they developed the Desolinator in the UK but tested it in India, through five prototype iterations. They said it not only works but "the water tastes great." What is more, their Desolinator took second place at a Climate KiC Clean Launch Pad competition and they established academic partnerships with Liverpool University (UK), Imperial College (UK) and College of Engineering Trivandrum (India). Their map: Put the device through a round of user testing in South India, start production, and have a final product ready to ship by October next year.

**Strengths:** Their system is a standalone unit; it does not need an external power supply; in turn it is energy-independent and has no moving parts. The developers say a one-off payment will provide water for households for up to 20 years. "The capital cost of the Desolinator is a lot for many people. However as the system lasts for up to 20 years, has no consumables, no filters, needs no energy and only requires basic maintenance, this cost can be mitigated." (The Indiegogo campaign site said that "Many people around the world get their water via a water truck coming to their village. The water truck is irregular and [drinking water](#) will still need to be boiled to be ready for consumption. It is also expensive - we have met families in South India that pay up to \$16 a week for all of their water.")

By 2030 the UN estimates that half the world's population will be living in [water](#)-stressed areas.

**More information:** [desolinator.com/](http://desolinator.com/)

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