

# MIT and JAIN team wins the Desal Prize for desalination system

April 27 2015, by Bob Yirka

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Credit: George Hodan/public domain

A combined team of researchers with MIT and India based, JAIN Irrigations Systems has won the top Desal Prize—a competition to see who could come up with the best desalination system for providing water

for crops in arid places. The team has won US \$140,000 for their efforts. The timing for the competition could not have been better as the headlines in U.S. have been filled with news of newly implemented water restrictions in California—one of the main sources of agricultural production in the country.

Five teams vied for the prized which was based on three criteria: designs had to be energy efficient, cost-effective and environmentally sustainable. The MIT/JAIN system was based on the electro-dialysis-reversal principle, a method that relies on the slight charge present in dissolved salt particles—salt can be attracted and pulled with an opposite charge. The power for the system comes courtesy of batteries charged via solar panels. Other large [desalination](#) systems typically use reverse osmosis—a process that works but is extremely inefficient, resulting in 40 percent wasted water on average.

The three day competition was run earlier this month by the U.S. Agency for International Development (USAID) (which noted that worldwide water need is expected to more than double by 2050) in conjunction with the Bureau of Reclamation, and partners the Ministry of Foreign Affairs of the Kingdom of The Netherlands and the Swedish International Development Cooperation Agency. Its purpose was to help find a way to clean brackish water for use on croplands—with the focus mainly on helping third world countries. USAID also noted that approximately 70 percent of all water used by humans goes towards growing food.

In addition to removing salt, the winning system was also found able to soften the water it was treating and to kill bacteria via exposure to a UV light source. It featured a water recovery rate of approximately 90 percent.

The competition was run at a research facility in New Mexico—each team had to run their system for 24 hours straight, which involved

processing 2,100 gallons of water. The next step will be to test the system in a real world agricultural area, USAID will be providing an additional \$150,000 in funds to help the team further develop and test their system. The hope is that the system will prove its value after such real world tests and will then be commercialized and made for sale to people living in places in desperate need of fresh [water](#).

**More information:** [www.usaid.gov/news-information...nt-announces-winners](http://www.usaid.gov/news-information...nt-announces-winners)

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