

# Engineering Study: floating solar panels could help save the west from the heat

*How floating solar cells on what is left of Lake Mead could prevent enough evaporation to provide water for 5 million Americans/year.*

LAKE MEAD, NEVADA, USA, July 1, 2021

/EINPresswire.com/ -- Massive water shortage in Colorado River threatens entire region during what could become a normal heat wave. A new [study](#) shows a profitable solution to the coupled water-energy-food challenges is the concept of floating photovoltaics or floatovoltaics (FPV).

[Engineers](#) completed a recent study on a new approach to FPV using a flexible crystalline silicon-based photovoltaic module backed with foam, which is less expensive than conventional pontoon-based FPV. The results show that the foam-backed FPV had a lower operating temperature than conventional pontoon-based FPV, and thus a 3.5% higher energy output per unit power. Therefore, foam-based FPV provides a potentially profitable means of reducing water evaporation in the world's at-risk bodies of fresh water. We did a specific [case study](#) of Lake Mead.

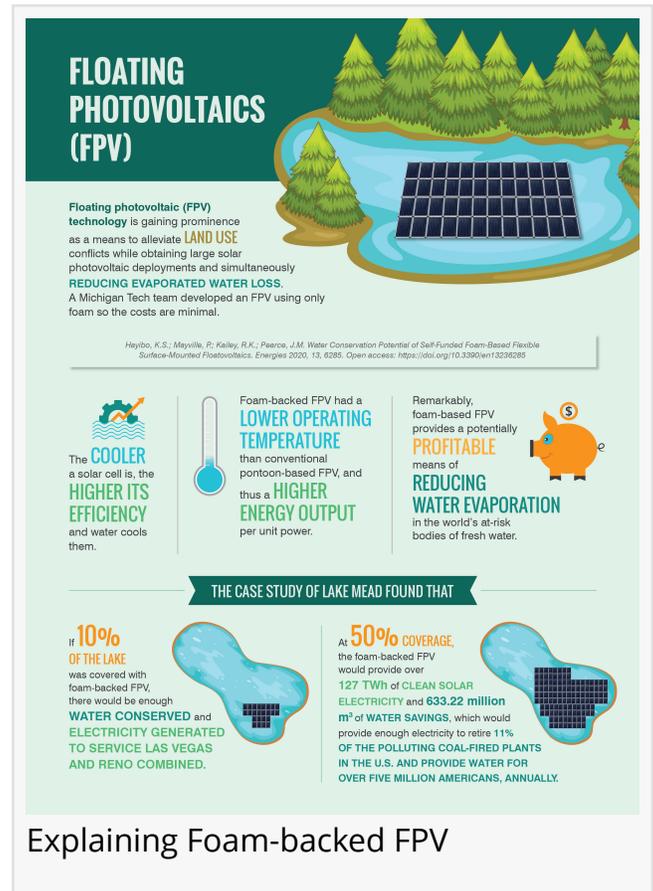
“

Foam-backed floating photovoltaic systems would provide enough water savings on Lake Mead alone to provide for over five million Americans, annually.”

*Prof. Joshua Pearce*

This novel form of FPV is tested experimentally for operating temperature and performance and is analyzed for water-savings using an evaporation calculation adapted from the Penman-Monteith model. The case study of Lake Mead found that if 10% of the lake was covered with foam-backed FPV, there would be enough water conserved and electricity generated to service Las Vegas and Reno combined.

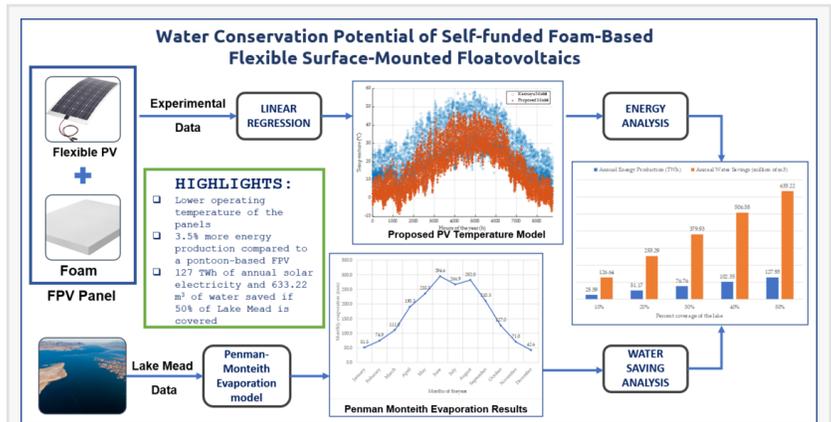
Joshua Pearce, the senior author on the study explains, "If we are even more aggressive with FPV deployment the



potential solution scales. At 50% coverage, the foam-backed FPV would provide over 127 TWh of clean solar electricity and 633.22 million m3 of water savings, which would provide enough electricity to retire 11% of the polluting coal-fired plants in the U.S. and provide water for over five million Americans, annually."

Full study: Hayibo, K.S.; Mayville, P.; Kailey, R.K.; Pearce, J.M. Water Conservation Potential of Self-Funded Foam-Based Flexible Surface-Mounted Floatovoltaics. *Energies* 2020, 13, 6285. <https://doi.org/10.3390/en13236285>

MOST Info  
 MOST  
 +1 906-487-1466  
[email us here](#)



FPV water saving potential



Lake Mead is drying up

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