EDS Webinar Series 2021

21. January

RECENT TECHNOLOGIES FOR COUPLING PHOTOVOLTAIC ENERGY WITH REVERSE OSMOSIS.

The geographical coincidence of water scarcity with high availability of solar radiation makes desalination powered by solar energy the most sustainable solution to the increasing water crisis. The use of solar radiation can also facilitate the deployment of desalination technologies by avoiding the carbon emissions associated to the high energy consumption.

In this webinar we will discuss the coupling of photovoltaic (PV) radiation with reverse osmosis (RO) for stand-alone desalination. First, Instituto Tecnológico de Canarias will present their long experience designing and installing PV-RO systems in remote areas. Then, some innovations that avoid the use of batteries will be discussed. Elemental Water Makers use an elevated storage for continuous operation of the PV-RO unit. Mascara works in adaptative control and alternative short-time storage techniques to achieve 24-hour operation of PV-RO.

"**Background in PV-RO desalination. ITC's experience in implementing the DESSOL system".**
(Juan Antonio de la Fuente)

Juan Antonio de la Fuente is graduated in Marine Sciences and Chemical Engineering. Researcher at the ITC Water Department since 2007, working on desalination projects focused on the test and evaluation of different desalination systems powered by renewable energy sources; in addition to the test of energy recovery systems for low production capacity reverse osmosis desalination plants. Other relevant background: he worked in the start-up, commissioning and production stages of a 65,000 m^3/d SWRO desalination plant in Murcia (Spain).

"Elemental Water Makers: From water scarcity to abundance by the sea & sun"
(Sid Vollebregt)

Sid Vollebregt is the CEO of Elemental Water Makers (2012), who have commissioned their unique solar desalination technology in 18 countries. He received the 1st prize of the MBR Global Water Award from the Emir of Dubai, selected out of 138 organizations. He's also an accredited Faculty Member of Singularity University & the Chairman of the Elemental Water Foundation.

"Mascara's experience in battery-free solar desalination: feedback and perspective".
(Mélaine Ducros)

Eng. Mélanie Ducros is Project Manager at Mascara Nouvelles Technologies. She is a trained engineer with both a MSc in Renewable Energy Engineering and a Diploma of Engineering in Process, Energy and Environment. She has worked with the French Agency of Development (AFD) in the development of rural programs for access to potable water and energy in remote communities in Africa jointly with the European Union, the World Bank, and several NGOs. She took part in the development of one of the biggest off-grid hybrid solar plant in Africa and the launch of a national-scale rural electrification program through PPPS and based on renewables.