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Energy Water Solutions



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*The annual listing of 10 companies that are at the forefront of providing
Oil and Gas solutions and transforming businesses*

Energy Water Solutions

Optimizing Produced Water Management



Beau Egert,
CEO

The management of produced water has emerged as one of the biggest challenges for operators in the oil and gas (O&G) industry. Most commonly, operators transport water in trucks from the well-site to disposal wells, and costs can reach as high as \$10 per barrel in some parts of the country. Adding to these worries is the extensive upsurge in the ongoing development of the U.S.'s unconventional resources that leads to increased water use for hydraulic fracturing and growing amounts of produced water. The large and remote volumes of

water and decreasing availability of disposal options due to capacity constraints, regulatory concerns, and seismic potential also snowball into a headache for most operators.

Alongside the increasing cost, produced water brings in several environmental concerns. For instance, trucks carrying produced water elevate transportation-related emissions, road safety issues, and roadway degradation, adversely affecting the ambient air quality, increasing noise levels, and hence disturbing the local highways and the neighbouring communities. Also, as produced water can be chemically complex, it has to be appropriately managed to ensure compliance with environmental and safety standards to avoid hazardous consequences. Energy Water Solutions (EWS) was established to mitigate these challenges and revolutionize how produced water is managed across the O&G industry and other industrial applications.

"We are a leading water technology company that specializes in helping clients lower their water management costs in an Environmental, Social, and (Corporate) Governance (ESG) responsible way," says Beau Egert, CEO of Energy Water Solutions. Founded in 2012 with a mission to develop a sustainable approach to produced and flow back water management, this Texas-based company has developed a proprietary and patented water evaporation technology, VOX™, which stands for vaporization in a box.

INTRODUCING A UNIQUE PATH FOR WATER MANAGEMENT

EWS' state-of-the-art VOX™ technology is designed to evaporate produced water at the pad site by using high-temperature air, therefore eliminating the need to spend huge capital on transportation, treatment, and disposal. "This way, we are lowering the water disposal costs of our customers not in nickels, but in dollars per barrel in many cases," emphasizes the CEO. One of the numerous advantages of using VOX™ is that it requires only a minimum amount of power consumption, making the whole evaporation process more sustainable. Furthermore, EWS enables clients to translate ESG principles into concrete actions by taking trucks off the road, returning water to the water cycle, maintaining an outstanding health, safety, and environmental (HSE) culture, and achieving utmost reliability in operations.

Another aspect that gives EWS' evaporative technology an edge over the competition is its ability to keep solids in solution, leaving TDS, NORM, and other volatile compounds within the concentrated brine. The VOX™ system evaporates only the pure water. This customized, fit-for-purpose water evaporation solution is carefully calibrated to the specific needs of the pad to ensure no solids are produced. The VOX 4™ was specifically designed for the Appalachian Basin with an evaporation capacity of 150-200BPD per unit, which can be manifolded together for higher flowback volumes. The technology helps clients reduce their produced and flow back water volumes by 20-80 percent, depending on water chemistry, making it well suited for on-pad operations or installation at produced water storage and treatment and disposal facilities. EWS is currently designing a larger unit that will handle higher water volume basins such as the Permian.

OUTRUNS THE COMPETITION WITH TECHNICAL EDGE

Though there are several players that provide evaporative disposal technology, their setups are usually large, costly, and often cannot meet environmental regulations. Unlike its competitors, EWS took a different route and designed its dynamic VOX™ technology small, mobile, modular units that require minimal CAPEX investment and, by manifolded them together, still have the capacity to evaporate large flowback volumes. "Our technology has in fact exceeded both our own and our customers' expectations in terms of their capacity, energy efficiency, and reliability," adds Egert.

EWS' VOX™ technology also solves a huge concern revolving around the use of evaporative technology — emissions. Emissions generated by the VOX™ are so low that EWS does not need an air permit to operate in many states because it is considered de minimis. "We pride ourselves on being the only evaporation

company that is permitted and operating in the Appalachian Basin," explains Egert.

Last year, the company received a formal acceptance of its airborne

client's approval, EWS takes complete responsibility for the successful, safe, and reliable installation and operation of the VOX™ units. Post-implementation, it deploys a team of experts at the

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emissions testing for its VOX™ technology from the Pennsylvania Department of Environmental protection. Furthermore, EWS helps customers achieve their ESG goals by taking trucks off the road and thereby reducing associated emissions and traffic and returning water to the water cycle via evaporation. "We're finding the best ways to recycle and put the water back into the water cycle itself, particularly in places like the west where water scarcity is a big deal," adds Egert. "We are also alleviating some of the heightened concerns around the increased seismicity of disposal wells by leveraging our novel VOX™ technology."

A COLLABORATIVE APPROACH FOR AN EFFICIENT FUTURE

As a customer-first company, EWS assumes the responsibility of its clients' success by adopting a unique approach while collaborating with clients. A typical engagement begins with the team at EWS assessing the project's scope, alongside understanding the water's volume, chemistry, and forecast curve. The company then puts forward specific pricing and leaves it for the customer's decision. Once it gets the

client's facility to provide them with its comprehensive suite of services. In addition, EWS goes the extra mile to provide clients with upfront permitting, engineering, operations support, and maintenance with minimal interference to ongoing operations at the well-site.

With its out-of-the-box approach to problems, EWS stands atop the ladder with its invincible VOX™. Having garnered countless acclaims from satisfied and happy clients, EWS plans to scale further by rolling out more VOX™ units and entering new basins and industries. Currently working in the Appalachian Basin, the company intends to deploy a larger VOX™ unit in other basins that can evaporate as much as 1,000 barrels of produced water a day, which is equivalent to the quantity of almost ten trucks and also be manifolded together for even large applications. Alongside, the company also aspires to implement its solutions in the power industry and at landfills for treated leachate water. "We have found opportunities for us beyond the scope of the upstream oil and gas space and intend to expand our footprint to other industries where our evaporative disposal technology can add value," concludes Egert. 