

Water Risk Management Policy

Water scarcity has become one of the top issues globally due to drastic environmental change over the past years. As water is a key component in White Energy's daily operation, White Energy is aware of the potential risk associated with water scarcity. To mitigate the potential risk, White Energy designated an employee to monitor drought level. Various systems are installed to reduce water usage and mitigate the water scarcity risk. VP of operation is responsible for managing water usage in operation and potential risk on water scarcity.

Water Management in Manufacturing: Risk Mitigation and Best Available Control Technology

- 100% of biorefineries have storm water retention ponds and boom systems.
- 100% of biorefineries are subject to water inspections by state and federal agencies.
- 100% of hazardous chemicals stored inside containment structures.
- 50% of biorefineries equipped with integrated zero liquid discharge systems.
- 100% of biorefineries equipped with pre-condenser system for CO2 to minimize scrubbing water.
- 100% of biorefineries recycle evaporative cooling liquid.
- 100% of biorefineries recycle evaporator condensate, stripper column bottoms and scrubber water for process reuse.
- 100% of biorefineries have installed high efficiency cooling tower fill and fan blades to maximize cooling efficiency and minimize water make-up to cooling tower.

Procedurally, we coordinate with state and local officials to ensure that our water usage is within the specified limits of our allowable consumption.

White Energy sources water from both municipal and ground water. Water usage and balance is tracked very closely at each of White Energy's production facilities. In 2016 White Energy installed an integrated zero liquid discharge (IZLD) system that eliminates water discharge out of the facility by purifying this stream and reusing approximately 328,286 cu meter of water annually. This represents 11% reclaimed water.

White Energy targets 5% reduction in water usage from the 2017 baseline by end of 2030.



Water Intensity Policy

White Energy uses water in connection with our processing of ingredients and is committed to reducing water usage across its biorefineries. We source our water primarily through the pumping of groundwater and receipts from third-party providers. We recognize that fresh water is a valuable commodity, and as a result, we focus our efforts on recycling and reusing as much water as we can in order to preserve water which benefits the local communities in which we operate in a positive manner.

Procedurally, we coordinate with state and local officials to ensure that our water usage is within the specified limits of our allowable consumption. As part of continuous improvement initiatives, White Energy reviews new technologies, and the possibility of incorporating water consumption reduction technology, as part of its annual capital planning process. This has resulted in the 2016 deployment of and use of integrated zero liquid discharge technology as one way to reduce water consumption.



Since 2014, we have reduced our water usage by 7% per gallon of ethanol produced and are developing additional targets to further reduce water consumption and increase total water recycled.

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total '000 Cu. Meter	2,656	2,796	2,807	2,631	2,758	2,545	2,433	2,811	3,112
Cu. Meter per MT of Etoh	4.30	4.32	4.24	3.81	3.87	3.61	4.00	3.99	4.20