Energy storage for renewable energy jerusalem

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Mekorot, Israel"s national water company, is advancing its renewable energy ...

news, conferences, policy discussions and academic publications on environmental issues and climate change in the Eastern Mediterranean

Kibbutz Yahel, near Eilat, is soon to be the first of its kind to store renewable energy via underground water and air compression tanks.This week, after a successful running period that lasted about six months at the test facility at the Kibbutz, renewable energy company Augwind announced that all the required tests have been completed, and their AirBattery system is operational and ready to use with an 81% efficiency level.

Augwind is an Israeli technology company founded in 2012 with the mission to create an alternative solution to energy storage. They have developed a unique renewable energy storage system, by utilizing compressed air, water pumps and turbines, all installed underground in a modular network of tanks.

Yossi Amiel, Business Manager of Kibbutz Yahel, explained that the AirBattery system"s utilization of underground space perfectly matched Kibbutz Yahel"s area-specific storage requirements."

We were looking for a solution that would allow us to store electricity when needed. The problem was that the space allocated to the storage facility covered an area where there is no possibility to install lithium-ion batteries." Augwind’s innovative energy storage system is moving Israel to a cleaner future. (credit: Courtesy of Augwind)

Besides the system"s discreet profile, Amiel also noted, "One of the by-products of Augwind"s system is cold air that comes out at a temperature of 15 degrees, which I can channel to cool the barn and plant, thereby increasing milk yield and maintaining the quality of date strands on their way to processing."

Augwind"s founder, Dr. Or Yogev, developed the AirBattery system as a way of solving one of the renewable energy field"s largest paradoxes: renewable energy is very commonly stored in rare-metal lithium-ion batteries, which have a heavy negative impact on the environment.

Yogev"s goal is to move away from these wasteful resources and toward something cleaner."Air is the raw material with which electricity is stored," he said. "It is like a spring that is charged and released, and as soon as the electricity is released for use, the air returns to the atmosphere without polluting it. This is a completely green procedure."

In a press release, Augwind described the hydroelectric dam as the "ultimate solution" for generating

electricity from green energy - an array of water reservoirs, dams and pumps in large structures that support the existing electricity infrastructure. This technology requires the production of a dam that will raise the water to a height of hundreds of meters in order to be able to generate electricity from them in the most efficient and green way.

However, despite all of its advantages, this "ultimate solution" is very difficult to implement in Israel due to a wide range of economic and environmental constraints. Gideon Friedmann, Acting Chief Scientist at the Energy Ministry (credit: ENERGY MINISTRY)

Augwind"s system effectively minimizes the hydroelectric dam"s profile, while utilizing the same core material."

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