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NISYROS WILL PRODUCE FRESH WATER FROM ATMOSPHERIC MOISTURE THROUGH SOLAR PANELS (PHOTO+VID)

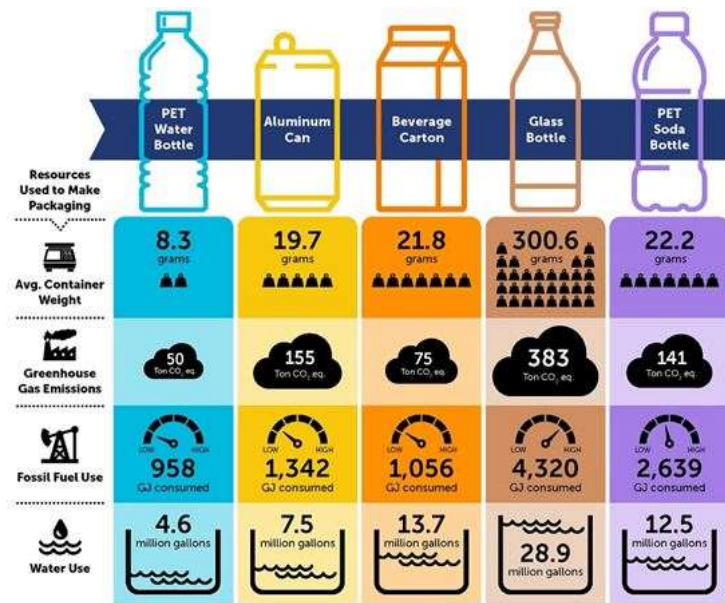
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of Nikos Avukatos

The pilot operation of the **Sun Air Fountain®** will begin in early 2023 in **Nisyros**. It is an **innovative solution** for the optimal treatment of the **water shortage problems** of the **remote Greek islands** . Essentially a **water collector produces drinking water** using **two renewable natural sources : atmospheric moisture and the sun** . It has a special adsorbent material to collect the moisture in the air and with solar energy **the water vapor is released and condensed**.

Recently, this economical and environmentally friendly alternative to bottled water received a **special prize of 30,000 euros**, in the framework of the **"Innowise Scale 2022"** program. ↑

"The award is important for our island. We are connected with Universities and research institutions and we are advancing innovations for energy and the environment. The municipality is included in four research projects. This award is a summary of the efforts we are making as a municipal authority to connect with higher education in order to transfer know-how to the local self-government," Nisyros Mayor **Christofis Koronaïos** told **Greenagenda.gr** .



(<http://greenagenda.gr/wp-content/uploads/2023/01/innowise-1-553-x-453.jpg>)

"This proposed technology offers quality water to the island's visitors, reduces pollution and impacts (e.g. costs of transporting and collecting the bottles) from the use of plastic bottles while enhancing the image of the island as a sustainable tourist destination with actions recovery - alternative water production", chemical engineer **Thomas Seitaridis** emphasized to **Greenagenda.gr** .



(<http://greenagenda.gr/wp-content/uploads/2023/01/nisiros-mayor-543-x-600.jpg>)

The mayor of the island



According to Mr. Seitaridis, the citizens of Nisyros, who have experienced difficulties in meeting their water needs, have the opportunity through this implementation to take part in an "active participatory workshop" where they will be informed about the solar water panel and the benefits resulting from the reduction of plastic bottles, while they will have the opportunity to see other possible uses of the system to cover small-scale needs in the circular economy axis.

The company Agua de Sol based in France in collaboration with the municipality of Nisyros will develop a pilot of 30 solar panels that will produce water from the humidity of the atmosphere at a point indicated by the municipal authority.

The SunAir Fountain® operates in three phases:

- At night, the drop in air temperature leads to an increase in relative humidity, and an autonomous energy-efficient fan under the panel absorbs the air inside the panel, resulting in water vapor being "trapped" in the adsorbent material.
- During the day, solar energy - heat releases water vapor from the adsorbent material, which is then cooled by the ambient air and as a result the water vapor condenses on the glass part of the collector. The condensed water then flows by gravity into the collector glass and is sterile when collected.
- The collected water is finally filtered thanks to a natural process.

How is fresh water produced?

The Sun Air Fountain consists of at least one panel which produces **up to 2 liters of drinking water per day**.

The installation of the SunAir Fountain can be easily carried out by the user, on the roof, terrace or even in the garden of a house.

Its maintenance is limited to only cleaning the air filter 2-3 times a year, frequent cleaning of the glass surface and changing/refilling the filter assembly annually. The lifespan is about 20 years.

Based on data from the municipality of Nisyros, **each visitor to Nisyros is estimated to consume an average of 9 bottles of 1.5 liters per stay**.

More detail:

6,000 visitors in May = 54,000 bottles (81,000 liters)

9,000 visitors in June = 81,000 bottles (121,500 liters)

15,000 visitors in August = 135,000 bottles (202,500 liters)

5,000 visitors in September = 45,000 bottles (67,500 liters)

Total = 315,000 1.5 liter bottles = 472,500 liters for guests only

The proposal of the **AGUA DE SOL** company is fully harmonized with the principles of the circular economy and the special conditions of the island. The size of the Sun Air Fountain is equivalent to the dimensions of a standard pallet and the water production is up to 1.2 liters per day for each panel (under atmospheric conditions of 30°C and 80% relative humidity).

For a family of five and an average consumption of 2 liters per person per day, 10 liters of fresh water per day, i.e. about 10 collectors. Each collector weighs 35 kg. It consists of a frame, a bed of adsorbent material, a glass sheet for condensation and a fan powered by solar energy.

Key benefits of SunAir Fountain®:

Sanitation: Tests and analyzes conducted by laboratories show that the water produced by SunAir Fountain is drinking quality water.

Ecology: Drinking water is produced and consumed locally. It is a 100% renewable water as in the whole process, no water is taken nor is the operation of the desalination units burdened. The ecological problem caused by plastic bottles and the negative impact of transporting water bottles are reduced. Finally, thanks to the use of solar energy, no electricity is taken from the grid, which further reduces the carbon footprint.

Economy: The cost of producing one liter of water is much lower than that of buying bottled water, even for 5 and 20 liter containers.

Practicality: Easy to install and requires limited maintenance (the air filter should be flushed every 6 to 12 months, the glass part of the collector should be cleaned regularly and the filler material and activated carbon filter should be changed/refilled annually). Society: Complementary to the collective infrastructures, it covers a basic human need and a basic right that of access to drinking water.