

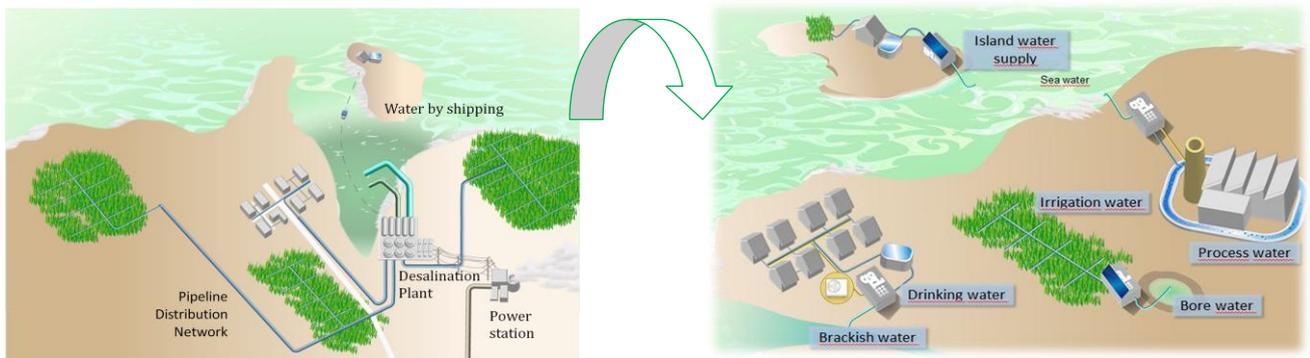
## WATER PRODUCTION SOLAR OFF-GRID, COGENERATION, OR WITH PROCESS HEAT

### DESCRIPTION

Sweet water production from sea water or brackish water, from a river or a bore, using low values of primary energy and zero carbon-emissions on the solar model.

It is adaptable to several uses, capacities or available energy sources. It can be used to produce fresh water.

It allows consumers neighborly units installation, avoiding centralized solutions with high costs of transport or infrastructures. Reduced environmental impact.



Centralized production

Decentralized production

### MODELS

#### Solar off-grid

Suitable for isolated sites. Equipped with solar thermal panels and PV modules to obtain heat and electrical energy.

#### Cogeneration

Working together with electrical generators, it uses the heat from the radiator and exhaust circuits. Connected to cold production equipment it uses the heat from cooling circuits.

#### With process heat

Water production as a by-product using the heat released from cooling system, industrial process, low pressure steam of thermoelectric central power, or from the salty water treated in oil exploitation.

### CAPACITIES

From 6 to 200 m3/day in single units. Productions up to 15.000 m3/day by modularization.



## TECHNICAL INFORMATION

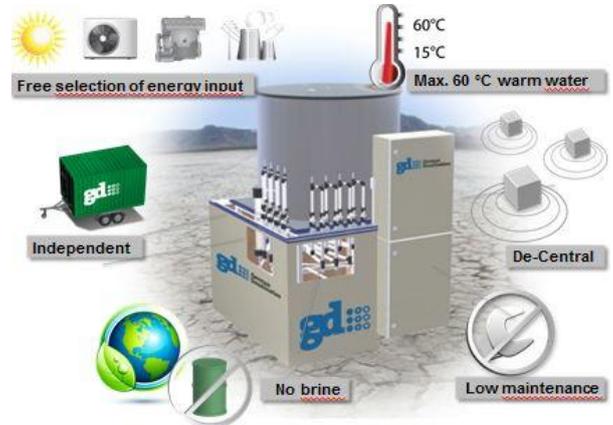
It's a distillation process operating at low temperature and low pressure, or LT-MED, with steam production between 60°C and 15°C. Pure distillate (< 10 ppm).

The main energy source is heat, and requires both hot and cold sources. The cold source can be the water to be treated, from sea, river or other. Electrical energy is required for automation and for water and vacuum pumps.

The concentration can increase up to 300,000 ppm, so this process can distillate saltwater rejected by reverse osmosis equipments.

Excluding the pumps this equipment does not have replacement components and the operating temperatures are low, so maintenance and total operation costs (lyfe-cycle cost) are reduced. Needs to be adapted to each source used, like any other equipment, namely to the characteristics of the water to be treated, existence of sand and seaweed, or others.

It is modular and expandable. The desired capacity can be obtained by association of independent modular units. It allows redundancy and high continuity of service (MTBF). And because each unit can be containerized it is possible to transport it to difficult access locations.



## MAIN APLICATIONS

Isolated villages, hotels and tourist developments, oil industry facilities and mining operations sites. Facilities energy efficiency can increase by installing water production by-product in air conditioning equipment systems, thermal power stations, or industries with heat generation.

## Did you know?



quarter of the world's population, face economic water shortage (where countries lack the necessary infrastructure to take water from rivers and aquifers)...

*"Water scarcity already affects every continent. Around 1.2 billion people, or almost one-fifth of the world's population, live in areas of physical scarcity, and 500 million people are approaching this situation. Another 1.6 billion people, or almost one*

*Water scarcity is both a natural and a human-made phenomenon. There is enough freshwater on the planet for seven billion people but it is distributed unevenly and too much of it is wasted, polluted and unsustainably managed..." (Source: United Nations Department of Economics and Social Affairs)*

*The United Nations do recognize since March 1977 the right of all individuals to access drinking water in quantity and quality required to their basic needs., irrespective of their development stage and socio-economic status.*

**What are you waiting for?** We have a solution that can help to solve this problem!

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