

The company

Dutch Rainmaker is a young technology driven innovative company. We are working on new and revolutionary concepts for the production of fresh water. Located in Leeuwarden Dutch Rainmaker forms a consortium with several institutes and companies and is constantly working on the further expansion of this consortium in order to facilitate the fast en broad introduction of the Dutch Rainmaker concept worldwide.

The challenge

One of the goals of the United Nations Millennium Development Program is to achieve a 50% reduction in the number of people who do not have access to safe drinking water by 2015 (WHO/UNICEF, 2000). Especially in locations where there is no infrastructure or surface water available, practical solutions for water supply and desalination are needed.

Some facts:

- Less than 1% of the total water resource in the world is potable water.
- Half the population of developing countries live in water poverty.
- Over one billion people do not have sufficient drinking water.
- Every hour, 240 children die, by lack of good sanitation and good quality of water.

Especially in locations where a good infrastructure and electricity is lacking, simple and reliable systems are needed for water production.

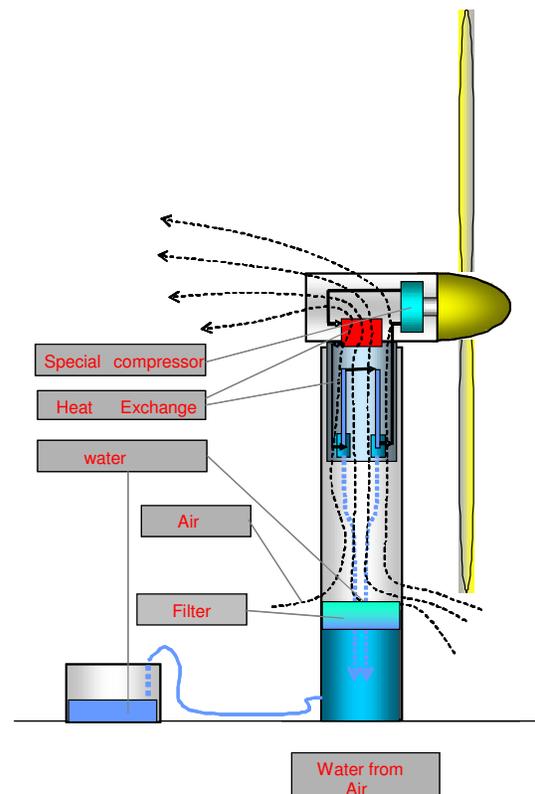
With the Dutch rainmaker concept we provide this solution.

The technology concept

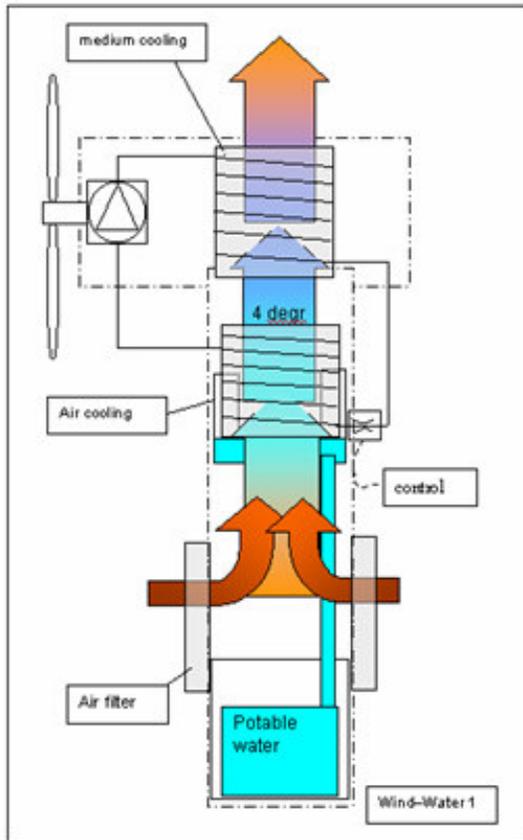
The Rainmaker concept is a system whereby a stand-alone wind turbine is placed in rain lacking regions. This system is especially suited for such environments if also devoid of briny, brackish or polluted water bodies

A Dutch rainmaker system, literally, makes freshwater from air!

The system's wind turbine does not drive a generator to produce electricity, as is commonly the case. Instead it drives a heat pump which is directly powered by the wind turbine's blades. With the heat pump the water vapour in the air is condensed and collected for domestic or irrigation purposes.



Dutch Rainmaker.....Water from Air



Operating principle

Depending on local ambient temperatures and humidity conditions air always contains a certain amount of water. This makes it possible to make water from air almost anywhere in the world. For example, air of 20 °C and 50% RH (relative humidity) contains approximately 7 grams of water per kilogram of air whereas air of 30 °C and 50% RH contains almost 14 grams of water/1 kg of air. (1 m³ of air weighs approx. 1.3 kg).

Because the turbine forces air through a heat exchanger -- where the air is cooled, condensation takes place. When the temperature falls below its dew-point water droplets will form and will be collected in a water storage compartment.

Warm ambient air, in particular, may contain large amounts of water. Lowering the temperature of air requires relatively little energy. By doing so large volume of water becomes available by condensation and can be utilized as drinking water or irrigation water.

Some key characteristics

- Minimal local infrastructure is needed.
- Sustainable **and** affordable technology.
- Minimal environmental impact, no external energy sources needed (only wind).
- 1 small sized windmill (18 meter rotor) can provide drinking water for an entire small village (500 – 1000 people).
- Stand-alone, simple and robust, low maintenance, long lifespan (up to 20 years).
- Minimal operating cost.
- Applicable in numerous climatologically different geographical areas.
- Local (geographical) production possible in a world-wide license structure.

Contact us!

If you are interested in the Dutch Rainmaker concept or want to know more about the consortium and possible participation, feel free to contact us:

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