

# Solar Stills

Worldwide safe drinking water supply is becoming an increased concern. The problems are more severe in coastal and arid & semi-arid areas. In India, 36 districts out of 96 districts in South India are affected by brackish water quality. Thus in India, provision of potable drinking water to citizens has remained a challenge to government and its concerned agencies.



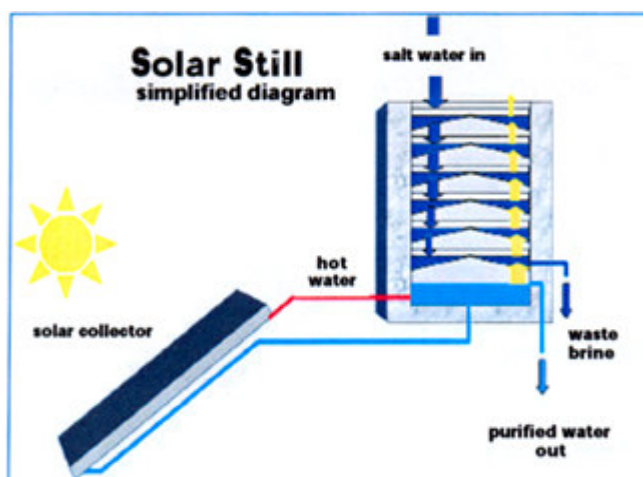
Solar stills are a simple and sustainable technology to remove salt and other contaminants from seawater or unclean water sources.

Thames Water has been supporting the development of several prototype solar stills at the Solar Institute in Julich. These stills are being designed to provide a practical method of creating safe drinking water for small communities.

The solar stills are:

- low in cost
- reliable (no moving parts)
- easy to maintain and free from chemicals
- efficiently powered by the heat of the sun

## How they work



The solar stills are made up of two main elements, the solar collector which uses the sun rays to heat the water and the stainless steel still itself which distills the hot water to remove salt and other contaminants.

The distillation process, which occurs in the still is similar to natural evaporation of water from the sea which creates clouds. The result is fresh water.

## Work in India

A scoping study conducted for solar stills in southern India states reveals the following;

- 25 million populations in rural southern India have no access to safe drinking water
- Willingness to pay for potable water is Rs 0.10 per litre

Ongoing activities;

Two solar still has been installed for field trails; one at TERI premises in Bangalore and another in Nidasesi village of Koppal district

- Analysis of the field trial results
- Acceptance analysis

## How much water will a still produce?

The stills under test are each producing on an average of 30 litre of fresh water per day from variety of solar collectors with areas of 2.2 m<sup>2</sup> or about 60 litre with a flat plate collector area of 5 m<sup>2</sup>



Prototype solar still under test in TERI premises, Bangalore; with vacuum tube collector

### Project partners & sponsors



Klemens Schwarzer, Solar Institute Julich, Germany: [schwarzer@sj.fh-aachen.de](mailto:schwarzer@sj.fh-aachen.de)  
Dolan Majumder, Thames Water, UK: [dolan.majumder@thameswater.co.uk](mailto:dolan.majumder@thameswater.co.uk)  
S N Srinivas, TERI, India: [sns@teri.res.in](mailto:sns@teri.res.in)