

# **Strange, new, and (truly) alternative energy (re-)sources**

- The German Comenius Club

## **Ocean current energy**



Water power is one of the oldest energy sources of the humanity.

For over 2000 years the strength of water is used to work grain and saw mills or hammer smiths.

Today hydroelectric power plants produce about one fifth of electricity needed worldwide.

In the area of the use of waves and sea currents there is in spite of big potentials still no stream production technology ready for the market.

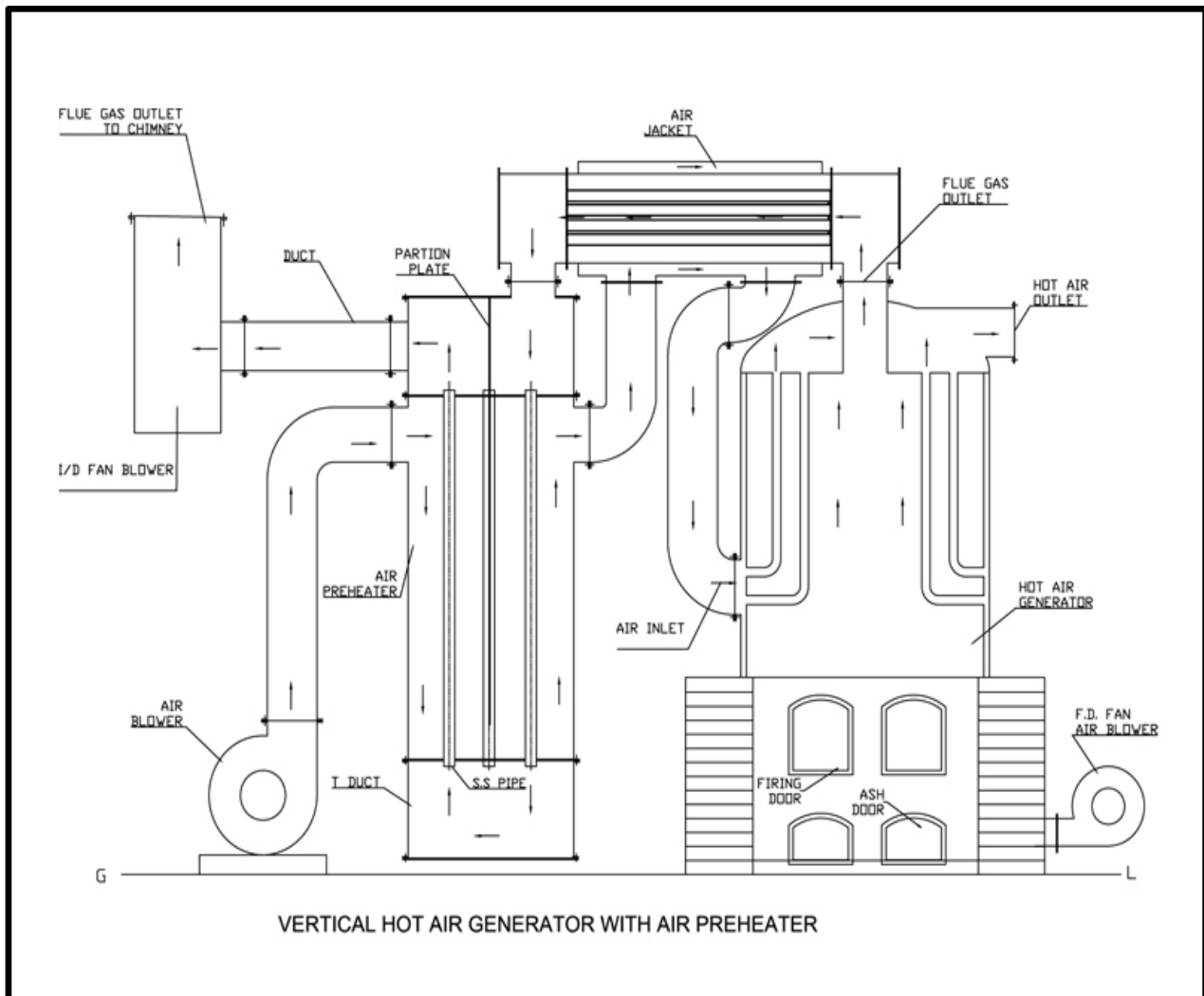
This report introduces an innovative technology which might allow electricity production from the sea in the future.

– Klara Blotta

## Hot Air as Fuel

Warm air moves upward.

A greenhouse has projectors in its ceiling which suck up the warm air rising upward through a discharge hood. The warm air is converted into energy. This energy system can now be used in the greenhouse for irrigation.



— Mara Dethlaff

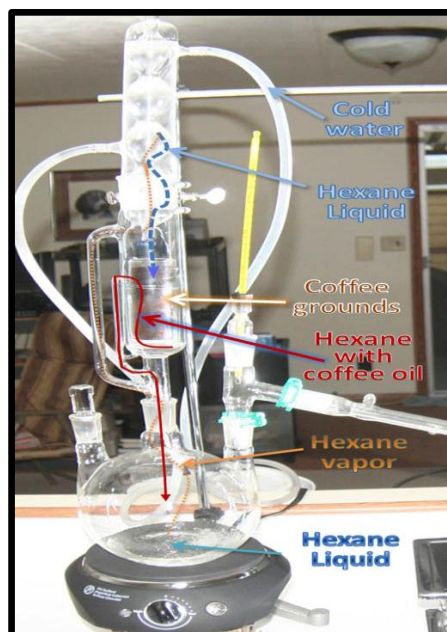
## Reprocessing Coffee Grounds into Biodiesel



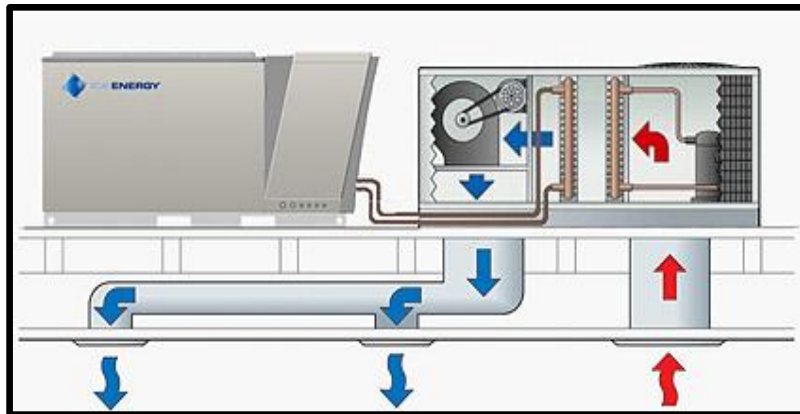
Starbucks is working to convert the coffee grounds into biodiesel. Their goal is that they have zero waste at their 150 European factories by 2020.

How?

Firstly, they extract oil from the coffee grounds. Then they dry the remaining waste in order to create a cheap alternative for purification products used in biodiesel production. Finally whatever is left was burnt to produce electricity, following the same method as burning biomass.



## Ice Energy- An efficiency System



Ice energy is a powerful change in how and more importantly when – energy is consumed for air conditioning.

This is useful for example:

After work a lot of people go shopping. Malls, department stores and other retail Centers have an evening peak to deal with, as they start turning on their lights and cranking up their air conditioners to keep buildings cool. Heat, unlike sunlight, keeps gathering throughout the day, and tends to peak in the late afternoon. That means that those rooftop AC units are cranking their hardest right when solar power is already fast on its way to dropping off to its evening zero point.

The system stores energy at night, when electricity generation is cleaner, more efficient and less expensive, and delivers that energy during the peak of the day to provide cooling to the building.

Daytime energy demand from air conditioning – typically 40-50% of a building's electricity use during the most want hours of energy at a day – can be reduced significantly. In kilowatts, each Ice Bear delivers an average reduction of 12 kW of source equivalent peak demand for a minimum of 6 hours daily, shifting 72 kW-hours of on-peak energy to off-peak hour.

Over the next two years, the 11 small participating utilities will install 6,000 of the devices at a total of 1,500 locations, providing 53 megawatts of energy storage to relieve strain on the grid, and coordinated by the [Southern California Public Power Authority](#).

<http://www.greentechmedia.com/articles/read/how-sun-power-and-ice-energy-can-play-together>

– Jasmin Klos

## Power your TV by yourself



This picture shows how to power your TV by yourself, with a bicycle. You can build it by yourself.

Here is a video which shows how it works:

<http://www.youtube.com/watch?v=WvEK4I5HGz4> 2:36 min.

Here it is with lamps:

<http://www.youtube.com/watch?v=ai-HNhtTMDg> 52 seconds.

How to build:

<http://www.instructables.com/id/ETW4MPKF5ETOBS6/?ALLSTEPS>

Info:

[www.los-gatos.ca.us/davidbu/.../ultimate\\_pedal\\_tv](http://www.los-gatos.ca.us/davidbu/.../ultimate_pedal_tv)

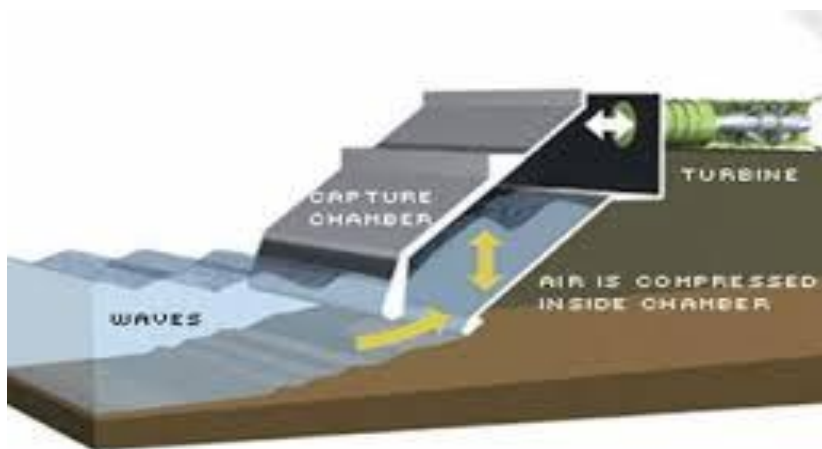
– Annabell Baumeister

## Waves energy

We all know that the sea and the beach is something beautiful but did you know that you can also use the waves to win energy?

There are different ways to win energy and here is one of them!

1. The waves go into the hole under water and push the air up
2. The air will go into the turbine and turn the generator in it on
3. The generator will produce energy

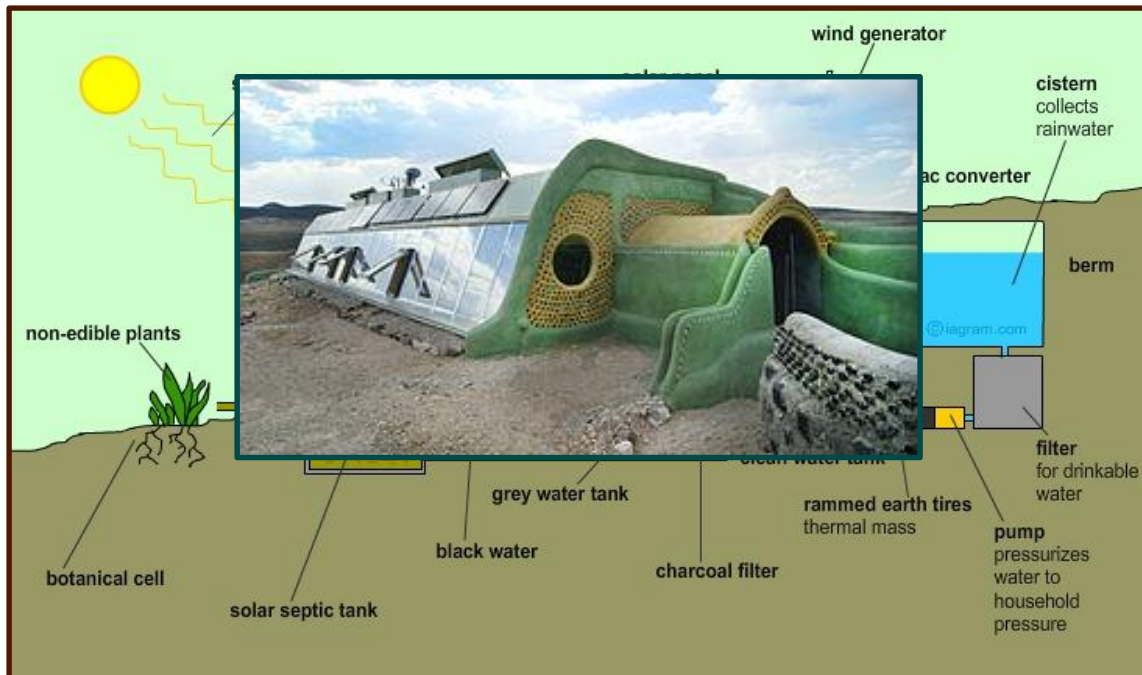


– Ina Klett

## Earthships®: Living self-sufficiently

An **Earthship** is a type of passive solar house made of natural and recycled materials (such as earth-filled tires).

It is designed and marketed by Michael Reynolds of Earthship Biotecture of Taos, New Mexico.



The production of a generic *passive* house costs about 1500 €/ square meter. The production of an Earthship house costs only 250 €/ square meter and is almost completely self-sufficient (recycling, water, heating, cooling, sewage, greenhouse) !!

Please visit the following sites for more information:

<http://en.wikipedia.org/wiki/Earthship>

<http://en.wikipedia.org/wiki/Earthship>

All the best! - Mrs. Sten