
MARE NOSTRUM

MULTILATERAL COMENIUS PROGRAMME
'MARE NOSTRUM'

LISBON VISIT
MARCH 2015
3rd HIGH SCHOOL OF ACHARNES


SEA ENERGY

The sea surface **absorbs** large amounts of energy **from the sun** and **wind**. The forms of sea energy vary while there are large amounts of energy that can be used.

The basic ways of taking advantage of the sea energy are :

A) from the **waves**

B) from the **tidal phenomenon**

C)from temperature differences (**geothermal energy**)

WAVES ENERGY

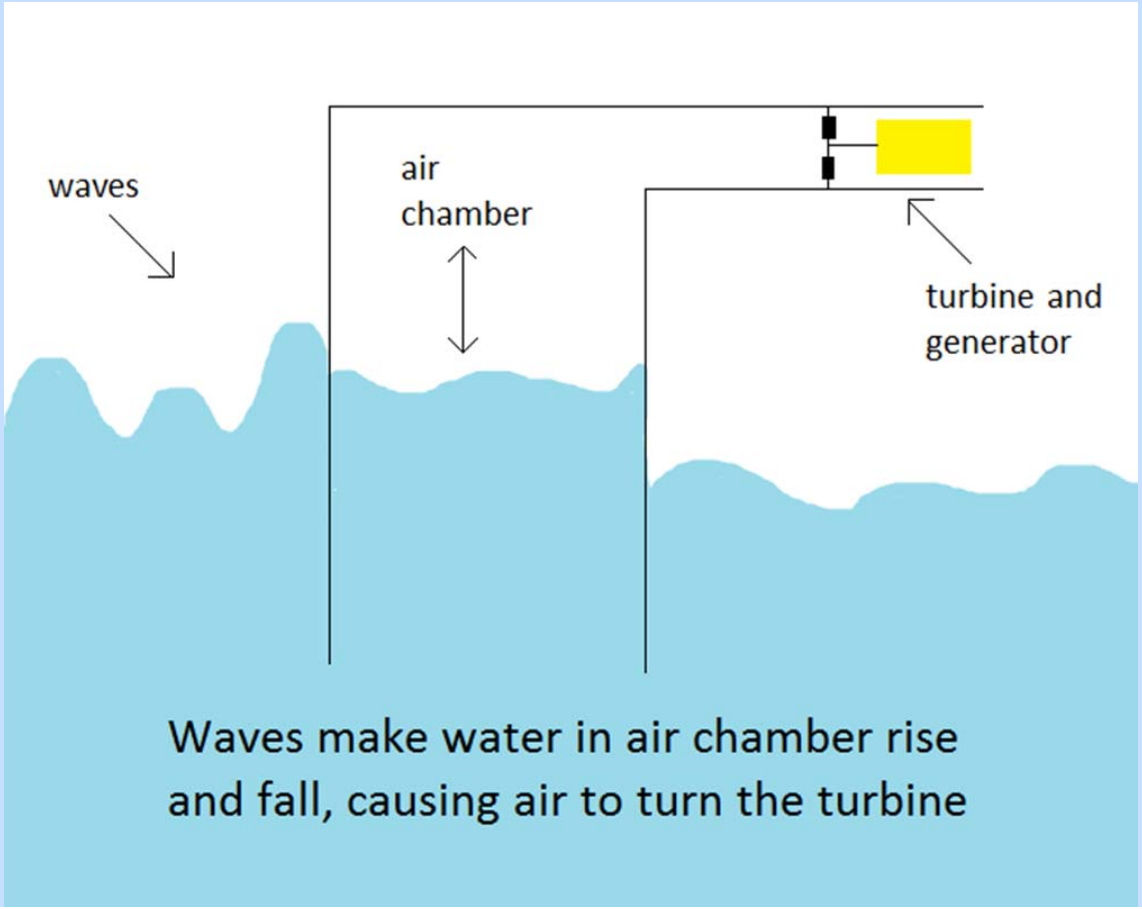
The waves are a powerful source of energy, which is not so easy to be converted into electrical energy in large amounts. As a result, nowadays, there aren’ t many stations producing electrical power from waves.

There are many kinds of waves. The ones that are produced from the wind are more likely to be used in the future.

It is calculated that the use of **1%** of the wave energy would cover four times the energy needs worldwide.

There are many ways of taking advantage of the wave energy.

The most usual are the following:



The production of wave energy has **many advantages**, as no land is necessary and there is only a minimum of **visual and aural discomfort**.

Although we possess the necessary technology, the cost of such energy production remains quite high.

TIDAL

ENERGY

Technology uses the **decrease and increase** of sea surface level during **the tide**, of a usual 12 - 24 hours duration. These kinds of **currents** are **powerful** and **ideal** for taking advantage of, because they **appear at shallow depths**.

How do we produce such energy?

The construction of a dam at the start of a bay creates natural cisterns, where water enters in weirs. When the tide is up, the cisterns close and open again when the tide lowers.

Tidal currents are considered to be a particularly efficient source of energy. During the last decade many European organizations and engineering companies have focused their activities on this sector. These technologies are similar to those of wind energy.

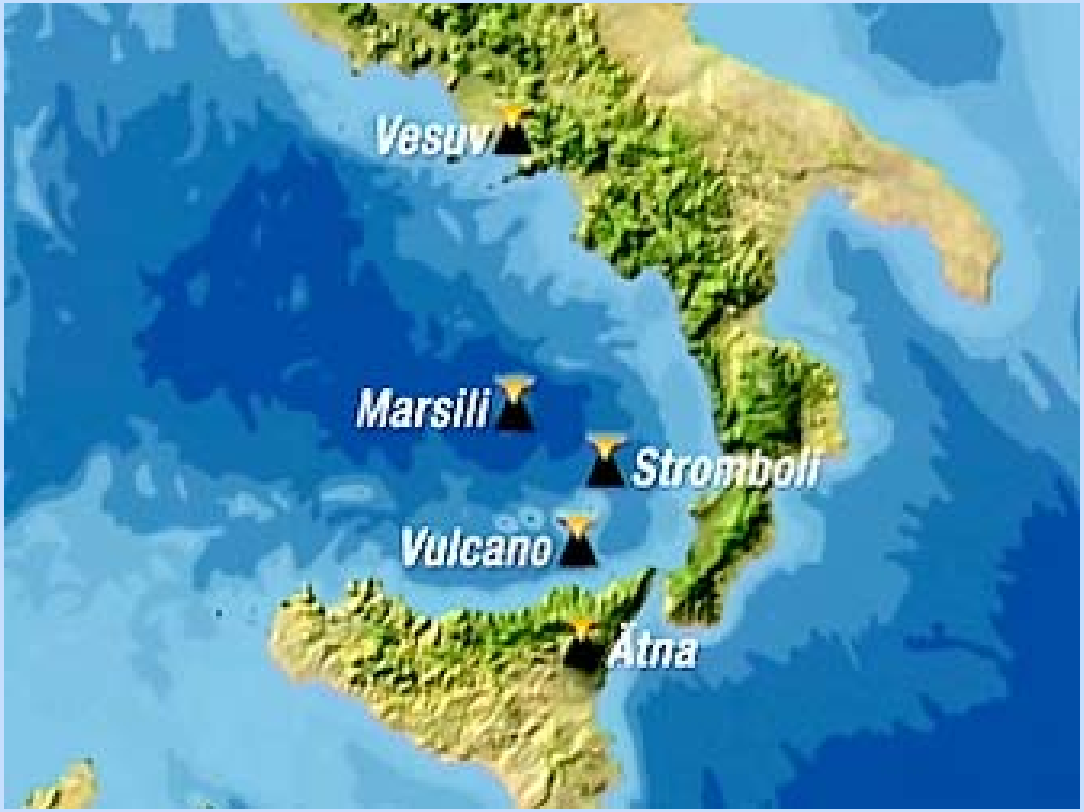
One of them is the strait of Euripos, in Chalkis on the island of Eubea.
Wishfully this energy will be used in the near future !!!

GEOTHERMAL ENERGY

Geothermal energy is the natural heat of the Earth transmitted in currents limited to areas **near the boundaries of tectonic plates due to volcanic and hydrothermal phenomena.**

The secret of energy production is hidden in geothermal fluids. So, underground water tanks of sea or other kinds of water **reach temperatures often exceeding 350 ° C**, due to contact with rocks, which are heated by lava located in the earth.

Marine Geothermal energy is an important source of the kind.
The Marsili volcano can become the first source of open sea geothermal energy supply in history by opening the way for a new type of clean and inexhaustible energy.



The so-called volcanic arcs exist in the Aegean sea..

Might these sources of energy be used in the future?

Bibliography

- http://www.allaboutenergy.gr/Paragogi326.html
- http://oikoenergeia.gr/index.php?option=com_content&view=article&id=776:2012-10-29-14-11-56&catid=51:2009-05-15-01-19-36&Itemid=56
- http://www.geodifhs.com/gammaalphaiotaalpha/295

A project by the students:

- Stamatis A.
- Helen I.
- Konstantina S.
- Martiana Z.
- Maro K.