



29th International Conference on Lightning Protection

23rd – 26th June 2008 – Uppsala, Sweden



ELECTRICITY FROM OCEAN ENERGY

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Abstract

Man has feared the vast power and the energy of the ocean all times and also has been fascinated by this natural phenomenon, namely the waves. Since 1799 it has been tried to harness the energy of these waves. Lately, due to many contributing factors, the interest has increased to utilize the vast untapped source of renewable energies of the ocean. Primarily three different categories of energies could be found in today's scientific literature. These categories are: the energy conversion of wave power, the kinetic energy conversion of water – so called marine current power and the use and/or conversion of salinity as well as the use and conversion of thermal gradients.

At the Swedish Centre for Renewable Electric Energy Conversion, we have since the beginning of the century been studying the wave power and the marine current power conversion. Today, five PhD examinations and around 30 international peer reviewed publications have been presented. This paper is a summary of the works carried out at Uppsala University in this field that covers both theoretical, computer simulations, laboratory experimental and full-scale on-sight verifications work.