

# ABSTRACT

With the ever-increasing demand for more energy and the depletion of natural resources that comes along with it, the race to find reliable alternative sources for such energy production is becoming more visible than ever. To participate in finding alternative energy sources, this proposal was made with the concept of a device that will help reduce current energy emissions as well as the exhaustion of non-renewable energy sources. SEREENA, the Self-Regulating Wave Energy Absorber is a device made to efficiently utilize the ocean waves on various shorelines all the while withstanding its harsh environment. SEREENA converts wave energy with two main mechanisms that accordingly follow the horizontal and vertical impacts of the waves. Moreover, SEREENA is also able to self-regulate depending on the ocean tide level. With its rather simplistic design, SEREENA is easy to manufacture and plant on shorelines. The concept of SEREENA will be tested in this paper with the correlating theories to test out its capabilities. This paper will also showcase the design of SEREENA in order to visualize the previously mentioned mechanisms. This paper is made with the hopes of utilizing SEREENA in the near future to ultimately reduce the toxic outcomes of current energy-producing methods.