Abstract
Oscillating Water Column (OWC) is one of the systems and equipment that converting ocean wave energy to electrical energy using isolation columns and there is a small channel called the orifice. Mechanisme principle of the OWC to wave energy conversion is to harness wave power into a column. So, water in column will be fluctuated/ oscillated. Then, it move up-down and press over air. Then the air pressure which is out of orifice resulting a turbine mounted on a rotating column. Rotating turbine is connected to a generator that will generate electricity. Power will be calculated between variation in diameter orifice with a fixed diameter of OWC. In this study, we will looking for comparisons OWC diameter (D1), variations in the orifice diameter (D2), and variations of OWC from the waterline length (L), which generate the greatest power. After analyzing the values obtained, ie D1 = 8 m, the variation of D2 = 0.64 m, 0.74 m, 0.84 m, and the variation of L = 3.18 m, 3.28 m, 3.38 m. This power calculation using the Bernitsas formula. Then the dimensions that produce the greatest power is D1 = 8 m, D2 = 0.84 m, and L = 3.38 m that is equal to 1784452.33 kW in one year. the OWC facility cost analyzing planned will be installed at OWC Pengambengan Beach, Bali is using the existing method in the book of Constans. This method obtained electricity cost per kwh of Rp 406.304.

Keywords: OWC, wave energy, power, cost per kwh