Abstract

One of the alternative energy source for power plant in big supply in Indonesia is wave. Conversion of wave power energy so that can be converted to electricity power is using wave energy power plant based on oscillating water column (OWC) type. OWC is one kind of wave power plant that utilize power of air pressure that generated by wave's motion to rotate the turbine that connected to electric generator. In this study, the wave power plant will be planted at Bandealit beach, Jember and it will be calculate the power that can be generated by the power plant. The calculation will be performed on an existing design with three column with variation of each column width. Variation that used are 2m, 3m and 4m width for each column. From the calculation result of three variation of column width, it's obtained that the biggest power was generated by OWC with each column width is 4m. From the calculation results, it's obtained that OWC with 4m width for each column can generate 4.8 kilowatt evenly in 2011. In that case to handle electricity requirement of the location that 23850 watt (53 house x 450 watts each) then it takes at least 6 units of wave power plant to replenish the electricity requirement of the location.

Keyword: Wave power, Wave, Power Plant, Sea wave, Oscillating Water Column, OWC.