***Performance Analysis of Solar Seawater Distilator with Electric Heater to Increase Freshwater Productivity*.** Risse Entikaria Rachmanita, S.Pd., M.Si. as a Main Counselor

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ABSTRACT

The need for clean water is increasing rapidly along with the increasing population, while what we know is that the availability of clean water is decreasing every year. The difficulty of clean water is also very much felt, especially in coastal areas. The presence of infiltration from seawater that causes groundwater in coastal areas to feel salty. The use of drinking water that tastes salty when consumed directly is not recommended because it will have a bad impact on health. Distillation is a process to get clean water by distilling dirty water. The distillation tool designed in this study is a distilator with a double slope single basin type, namely by using a triangular prism-shaped distillation cover with a glass material thickness of 0.5 mm accompanied by a triangular wave-shaped absorber plate using an electric heater with an absorbent plate surface area of 0.48692 m² with a seawater volume capacity that can be accommodated in a basin of approximately 24 liters. The use of electric heaters in this distillation device aims to increase the temperature of the water in the evaporation chamber where if the water temperature rises, the evaporation rate will also increase which will have an impact on increasing the productivity of the fresh water produced. The highest freshwater product produced in the solar seawater distillation test with the help of electric heaters on July 22 was 0.474 Liters and obtained the highest efficiency of 24.84% with an average radiation intensity of 431.32 W/m² which requires 484.9 Watts of power. The quality of the distilled water has met the standards to be used, but it still needs to be carried out further testing processes to ensure that the water is suitable for consumption.

***Keywords**: Distilator, seawater, solar irradiation intensity, electric heater, v-corrugated plate.*