

## ABSTRACT

The electricity distributed from PLN is sourced from fossil fuels, the availability has begun to be limited and causes disturbances when supplying power so that PLN often performs rotating blackouts that disrupt human activities. To minimize the use of fossil fuels which also causes global warming, renewable energy is used as an alternative energy, namely sea water or with a salt electrolyte solution. The use of seawater and saline solution as an alternative energy source with this electrochemical cell method because it is environmentally friendly. Salt solution in water is an electrolyte solution that can conduct electricity. The design of a salt water lamp using sea water or a salt electrolyte solution was carried out to determine the effect of sea water and salt water on the quality of lighting and to determine the quality of the lighting produced from the electrolysis reaction. In its design, a fuel cell box is used as a place for the redox reaction to take place. The method used in the design of this tool is the experimental method. The results showed that the volume of water (sea water) had an effect on the resulting voltage and current. The greater the volume of water used, the greater the voltage and current generated because the charge carried is increasing. The more mass of salt used, the value of salinity also increases. The resulting voltage and current are directly proportional to the mass of the salt. The highest power is produced when the volume of seawater is 800mL which is 0.05 W and when the salt mass is 45gr 0.05836 W.

**Keywords: sea water, salt water, electrolysis reaction, salt water lamp, voltage, current**