

ABSTRACT

Research has been carried out regarding the potential for wind energy in the Balaroa liquefaction area in Palu City, West Palu District, which has an area of 203,042 hectares. Liquefaction that occurred several years ago resulted in the Balaroa area becoming an area prone to natural disasters which resulted in the creation of empty, uninhabited fields covering an area of 39.54 hectares. This empty field creates an opportunity for potential wind energy which can be utilized as renewable energy. This study aims to determine the characteristics of wind related to wind speed and wind direction and determine the opportunity to be used as electricity generation energy. The method applied is a survey method through direct measurements in the field and applying analytics to calculate effective power and wind energy conversion. The research that has been carried out shows that the wind speed is in the range of 7.21-8.43 m/s. If it is assumed that in previous research in the same area conditions using a windmill with a diameter of 4 m, the effective power produced during the measurement time was 22.39-3397.39 watts with an electrical energy of 0.85-128.60 watts/m².

Keywords: *Wind Energy, Renewable Energy, Balaroa, Liquefaction*