Abstract

Solar cells become one of the alternative energy to overcome the energy crisis, especially depletion of world oil availability. In this final task, carried out the analysis for the utilization of solar cells lighting needs Suramadu Bridge. Based on calculations from the data existing lighting in the conventional system or PLN known lighting load of 250 watts, so can the search input voltage when using the battery for 24 V inverter is assumed through the media. Further obtained for 11.6 Ampere supplay power to the load for 12 hours (18:00-06.00WIB) and obtained for 173.6 Ah. Furthermore, we find that much battery power. Then the light intensity data received in the area in Surabaya which measured over 9 hours from 07.00 - 16.00. Which was adopted on 12-26 September 2008 light for 9 hours to provide 138.96 Ah. So the solar modules should be able to charge with a 138.9 Ah battery for 9 hours so that the current 15.4 A charge is obtained, multiplied by the 24-volt solar to lift the load by 370 watts and require 2 modules each 185 Watt module. Then sought from the respective economic analasia known equipment for a single price and street light pole with a lamp for cost Rp.25,590,000, -. Was
the cost of conventional lighting for one month with a load of 3000 watts used during the day is Rp 12jam. 11,901,137, - (plus customs weight classes P2-TM). So the calculation of break event point to a single street light lamp load is = Rp. 25,590,000 / USD. 11,901,137 = 2.1 months. So the investment will come back for 2.1 months.

Keywords: Solar cell, lighting, Suramadu bridge, economy analysis.