

ABSTRAK

Energi fosil, khususnya minyak bumi, merupakan sumber energi dan devisa utama negara ini. Akan tetapi, meskipun permintaan energi meningkat seiring dengan pertumbuhan ekonomi dan populasi, Indonesia saat ini memiliki jumlah energi fosil yang sangat sedikit. Dengan demikian, sumber daya alam Indonesia menjadi semakin langka, karena sumber daya yang tidak terbarukan (batubara, minyak, dan gas) menyediakan sebagian besar sumber energi. Diperkirakan mobil listrik bertenaga baterai akan berkembang pesat dalam beberapa tahun mendatang (W.Gunandi, 2019). Pengumpulan data analisis efisiensi konsumsi daya pada mobil listrik 2kw menggunakan metode Studi Literatur dilakukan pengumpulan data referensi dan data awal untuk melakukan penelitian. Pengujian berikut dilakukan sesuai dengan variabel penelitian yang telah ditentukan. Tahapan pengolahan data penelitian mobil listrik 2 kW menggunakan metode pemodelan matematis mencakup Konsumsi daya dihitung menggunakan bobot pengemudi 54 kg, 67 kg, dan 73 kg serta variabel kondisi jalan datar, menanjak, dan bergelombang. Hasil evaluasi konsumsi daya mobil listrik 2 kW di jalan datar sejauh 1.000 meter menunjukkan bahwa semakin tinggi bobot dan voltase pengemudi, semakin besar daya yang digunakan mobil listrik 2 kW di jalan datar. Konsumsi daya berkurang seiring dengan berkurangnya berat pengemudi, voltase, dan arus. Pengujian konsumsi daya mobil listrik 2 kW dengan kapasitas baterai 54 volt, 45 amp menghasilkan kesimpulan bahwa jika voltase dan arus ampere yang dilepaskan tinggi dalam berbagai kondisi jalan, seperti jalan datar, menanjak, bergelombang, dan berat pengemudi, maka diperlukan pula konsumsi daya yang lebih tinggi.

Kata Kunci : Efisiensi, mobil listrik, kendaraan listrik, Baterai



ABSTRACT

The country's main source of energy and foreign exchange is fossil energy, especially petroleum. However, the amount of fossil energy that Indonesia currently has is very small even though along with economic growth and societal growth, energy consumption continues to increase. As a result, Indonesia's natural resources are increasingly depleted. Because most energy sources come from non-renewable resources (gas, oil, coal). It is believed that battery-powered electric vehicles will develop rapidly following the times (W. Gunandi, 2019). Data collection for analysis of power consumption efficiency in 2kw electric cars using the Literary Study method was carried out by collecting reference data and initial data to conduct research. The following tests are carried out in accordance with the research variables that have been determined. The stages of data processing for researching a 2 kW electric car using mathematical modeling methods include calculating power consumption using variable horizontal, uphill and bumpy road conditions with the driver's weight being 54kg, 67kg and 73kg. The findings of a 1,000-meter test of a 2kW electric car's power consumption on a level road indicate that the higher the driver's body weight and voltage, the more power the 2kW electric car uses on a level road. The smaller the voltage, current and driver's weight, the smaller the power consumption used. According to the findings of testing a 2kW electric car's power usage using a 54-volt, 45-amp battery, it can be concluded that if the voltage and Ampere current released is large with various horizontal road conditions, uphill, bumpy and the driver's weight means the power consumption required is also greater.

Keywords: *Efficiency, electric cars, electric vehicles, battery*