

ABSTRACT

Increasing carbon emissions are the main problem behind the issue of global warming, which is one of the most profound issues for scientists and researchers today. This study illustrates the negative impact of motor vehicle emissions on the environment, with statistical data showing the significant contribution of the transportation sector to carbon dioxide emissions globally. In addition, it illustrates the calculation of the investment to be spent for investors in building a lithium-ion hybrid plant and supercapacitors. The cash flow shows that the project is feasible to proceed with positive financial results, including an IRR of 14.23%, NPV of IDR 21,648,758,282.02, and NBC indicating a higher ratio of benefits than costs. Although it takes almost 10 years to break even, the sensitivity analysis shows that the project remains viable if production is < 263 units and raw material prices do not exceed IDR 8,237,404,262. In addition, this plant has significant potential in reducing CO₂ emissions, with an average reduction of about 68.29% per year, supporting the government's target of reducing carbon gas emissions by 43.20% by 2024. Therefore, this project not only promises financial benefits but also supports efforts to reduce carbon emissions in Indonesia.

Keywords: Sustainable Development Goals (SDGs), Electric Vehicles (EV), Lithium-Ion Battery and Supercapacitor, Investment Feasibility