

## ABSTRACT

*In modern times, agricultural activities have used automation systems. Especially in tomato cultivation, there are various problems that arise in the automation system. One of them is the limited source of electricity. To solve this problem, we need a power supply that can provide power to the automation system.*

*In this final project research designed a power supply with photovoltaic energy 100 Wp sources for automation systems in tomato cultivation. The electric power generated by photovoltaic will be stored in the VRLA 12 V 24 Ah battery, which will then be streamed to the automation system in tomato cultivation. The automation system consists of monitoring and controlling fertilization and irrigation systems, and protection against heat and rain. Based on the results of experiments that have been carried out, the energy needed in the tomato cultivation automation system reaches 69.98 Wh while the photovoltaic power supply system produces electrical energy with a daily average of 384.5 Wh and the battery is able to accommodate the energy generated by photovoltaic 288 Wh. In other words there has been excess energy in the system.*

**Keywords :** *Power Generation, Photovoltaic, Tomato Cultivation Automation System*