Solar-Powered Drone: Creating an Airplane That Is Solar Powered and Autonomous

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As the world is moving away from fossil fuels, we must find a new method of transportation of goods for a sustainable future. The world has already developed a new, flexible type of delivery in the form of drones. We want to combine the already existing drones with sustainable technologies such as solar power. The drone we designed is a fixed-wing for ease of production and installation of cells. The cells are soldered into one panel that charges an onboard battery, which in turn charges all other components. The plane's body was built with foamboard and reinforced with plywood composites, and the wiring was held together using electrical tape, zip ties, heat shrink, and solder. We used foam board because of its ease of use and cheapness, which was one of the advantages of our drone compared to other models. The drone is a fixed-wing drone, meaning that it resembles the classic Radio-Controlled (RC) airplanes with one motor powering the plane instead of many motors pushing the plane up in a multirotor. The drone has an onboard microcontroller known as a flight controller that controls the plane's autopilot function, the flight controller should be programmed on the computer, and it will follow that path automatically without the use of a remote. We tested the plane and concluded that the main two advantages of our design compared to others were that it is considerably cheaper than models of similar size and that it is partially solar-powered. Solar power promises to increase the battery life considerably and be a sustainable method of transportation.

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