



BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

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Department of Electronics & Communication Engineering

Major Project 4th Year (2024-2025)

PREPAID AND POSTPAID EV CHARGING STATION

ABSTRACT

Electric vehicles (EVs) are becoming more common, and there is a growing need for an easy and flexible charging system. This project presents a dual-mode EV charging setup that works with both prepaid and postpaid payment options. Users can start charging by scanning an RFID card. In prepaid mode, the system deducts money from the user's balance based on the amount of electricity used. In postpaid mode, users are charged after the charging session. This makes the system suitable for different types of users and helps manage billing more effectively.

To ensure accurate tracking of electricity use, the system uses voltage and current sensors. A microcontroller like Arduino or ESP32 controls the process by reading sensor data, managing the relay that starts or stops charging, and checking user balance or billing status. The system also displays important information like energy usage, balance, and charging time on an LCD screen or web interface. Overall, this project provides a reliable and user-friendly solution for EV charging stations, making them more efficient and convenient.

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