

CHAPTER 1

INTRODUCTION

1.1 Background

Semarang is located on the coast. In this location the weather is windy. The wind could be use as source of electricity energy that cheaper and renewable energy. Electricity that generated by the wind is produced by changing the kinetic energy in the blades propelled using dc generator. But sometimes the speed of wind blow is inconsistent. The wind speed that changes has an effect on the producing of electricity. It is happen because the wind speed changes can reducing the turbine performance so the power and electric current are unstable.¹

Based on the problem above, this project will develop a filling electricity rate measurement on powerbank by using optocoupler sensor, INA219 current sensor, hmc5883L compas sensor and Arduino. This project will prove that the wind speed has an effect on producing an electricity. This project will count the powerbank battery charging process using wind power.

1.2 Scope

The scope in this project are :

1. This project can change wind energy into electrical energy using dc generator and charge the powerbank.
2. This project can read wind direction using compass sensor.
3. This project can measure the current electrical produced.
4. This project can measure the wind speed.
5. How to prove that the wind velocity affects the speed of charging battery

1 RD. Maulana Ishak, "Perhitungan Pengaruh Kecepatan Angin Terhadap Daya Generator Dan Arus Pengisian Baterai Pada Turbin Angin Di Laboratorium Teknik Listrik Politeknik Negeri Sriwijaya", 2015

1.3 Objective

The objective of this project is develop a filling electricity rate measurement on powerbank and how to prove that the wind velocity affects the speed of charging batrrey. This project have many fiture as read the wind direction, measure the electrical current that produce by the wind power, measure the wind speed. All of the data that generated from the sensors can be seen by online using Arduino wifi shield.

