SIZING SOFTWARE FOR RESIDENTIAL GRID-CONNECTED PHOTOVOLTAIC SYSTEMS

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ABSTRACT

This final year project report presents software for sizing residential Grid-Connected Photovoltaic Systems developed by Microsoft Visual Basic. The software represents two design goals which are to meet specific output energy from the system and to maximize energy output from available roof space. The sizing process involves the selection of PV modules and inverter and computation of technical performance and expected income of the system. As existing sizing software for photovoltaic system such as PVSyst required manual selection of PV modules configuration and estimated PV array capacity (kWp), this sizing software perform automatic selection of PV modules and estimated PV array capacity.

TABLE OF CONTENT

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Renewable energy (RE) is energy which originates from inexhaustible resources. On the other hand, renewable energy also defined as electricity generated from recurring and non-depleting indigenous resources based on Renewable Energy Act 2011. There are many types of RE resources such as solar, tidal, wave, wind and geothermal heat [1]. Then, using the RE resources there are many types of RE technologies was developed which are solar PV, solar thermal heating or cooling, concentrating solar thermal power (CSP), hydropower, wind power, geothermal heat and power, ocean energy and biomass.

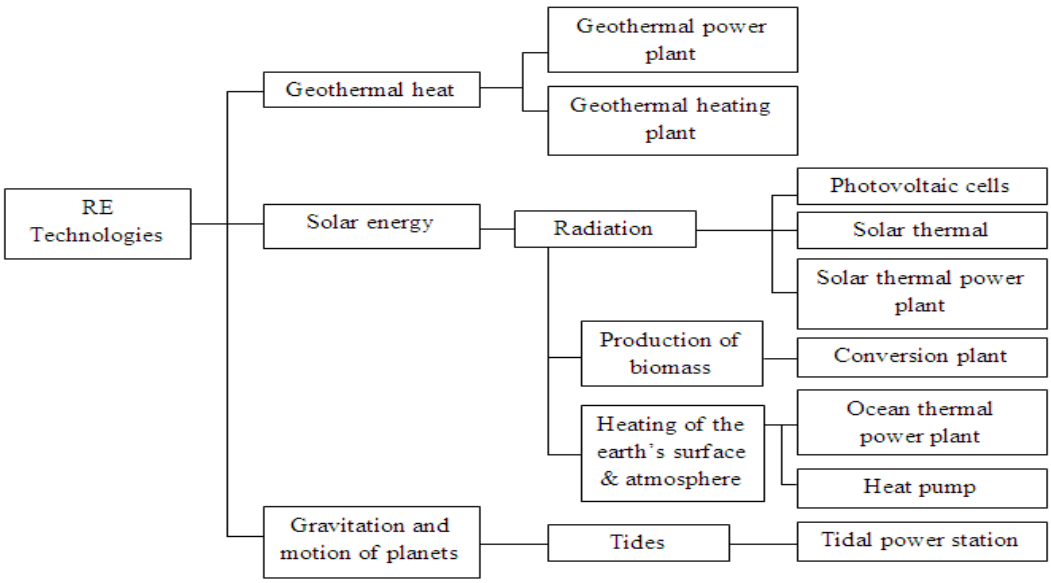

Figure 1: Types of RE technologies