

TITLE: Using Retscreen Analysis for Renewable Energy(RE)

AUTHORS: Keir Lindsay
Monica Boodhan
Tennille Marajh

SUPERVISOR: Dr. I. Haraksingh

The project seeks to utilize RETScreen software to model a hybrid renewable energy system to completely supply power for the energy needs of a modern house of a family of four. The renewable systems employed were the photovoltaic system, wind turbine and solar thermal systems. Research in the various fields was explored and the Physics of the systems examined. The complete load requirements were determined and appropriate amount of power allocated to the different energy systems. Necessary components of photovoltaic systems were examined and the system was tailored to match the load requirements. The operation of wind turbines was assessed and the horizontal-axis wind turbine was selected. Analysis was then done to determine the size of the system chosen. The applications of solar thermal systems in solar water heating, solar cooking and solar purifying were explored and suitable design components selected. Swimming pool heating was also assessed. Feasibility tests were then conducted using the RetScreen program. The implementation of these systems was found to be practical.