

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In the time where technology is merging with environmental awareness, consumers are looking for ways to contribute to the relief of their own carbon footprints. Pollution is manmade and can be seen in our own daily lives, more specifically in our own homes. Green technology initiatives are being supported by both the government and cooperative business. Our new design for an old and out-dated habit will help both the consumer and the environment. This project of an Electromechanical system for indoor outdoor applications will reduce both environmental and noise pollution. This design meant to be an alternate green option to the popular and environmentally hazardous gas-powered lawn mover. Ultimately the consumer will be doing more for the environment while doing less work in their daily life. Along with the grass-cutting capability it can also be used for cleaning the floors. Since it has got a headlight, it can also be used at night. It can also be used as a carrier to transport things up to small distance.

1.2 SOLAR POWER EXPLANATION

Solar energy, radiant light and heat from the sun, is harnessed using a range of ever-evolving technologies such as solar heating, photovoltaic, concentrated solar power, solar architecture and artificial photosynthesis. Solar technologies are broadly characterized as either passive solar or active solar depending on the way they capture, convert and distribute solar energy. Passive solar techniques include orienting a building to the Sun, selecting materials with favourable thermal mass or light dispersing properties, and designing spaces that naturally circulate air. Active solar technologies encompass solar thermal energy, using solar collectors for heating, and solar power, converting sunlight into electricity either directly using photovoltaic (PV), or indirectly using concentrated solar power (CSP).

A photovoltaic system converts light into electrical direct current (DC) by taking advantage of the photoelectric effect. Solar PV has turned into a multi-billion, fast-growing industry, continues to improve its cost-effectiveness, and has the most potential of any renewable technologies together with CSP. Concentrated solar power (CSP) systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. Commercial

concentrated solar power plants were first developed in the 1980s. CSP-Stirling has by far the highest efficiency among all solar energy technologies.

In 2011, the International Energy Agency said that "the development of affordable, inexhaustible and clean solar energy technologies will have huge longer-term benefits. It will increase countries' energy security through reliance on an indigenous, inexhaustible and mostly import-independent resource, enhance sustainability, reduce pollution, lower the costs of mitigating climate change, and keep fossil fuel prices lower than otherwise. These advantages are global. Hence the additional costs of the incentives for early deployment should be considered learning investments; they must be wisely spent and need to be widely shared". In 2013 solar generated less than 1% of the world's total grid electricity. Based on REN21's 2014 report, renewables contributed 19 percent to our global energy consumption and 22 percent to our electricity generation in 2012 and 2013, respectively. Both, modern renewables, such as hydro, wind, solar and biofuels, as well as traditional biomass, contributed in about equal parts to the global energy supply. Worldwide investments in renewable technologies amounted to more than US\$214 billion in 2013, with countries like China and the United States heavily investing in wind, hydro, solar and biofuels.^[4] This is a project we can find all those helpful things which can help people in consuming less non-renewable energy source.

CHAPTER 2