Photovoltaic (PV) - Assisted Electric Vehicle (EV) Charging System

Introduction

It has been projected that more than 500,000 electric vehicles (EVs) will be running on Canadian highway in six years [1, p. 6], but a lot of challenges need to be overcome to further increase this number. For example, recharging of EV should be fast and convenient. Currently, low cost, high efficient photovoltaic (PV) - assisted EV charging systems are on the horizon to be a promising candidate to utilize clean and renewable energy resources for EV charging.

In this project, we will design, simulate, develop, and test a prototype PV-EV charging system which is also grid-connected. The illustrated schematic diagram of the defined system is shown in Fig. 1 where the power is bi-directional between the EV battery and the power grid. For more details, please contact Prof. Carl Kropp (kroppcarl@aol.com) and Dr. Xiaoyu (Kevin) Wang (xiaoyuw@doe.carleton.ca).

![Schematic diagram of the PV-EV charging system.](image)

Fig. 1 Schematic diagram of the PV-EV charging system.

References