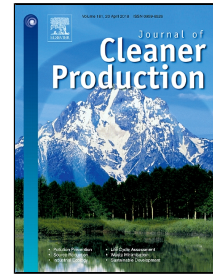


# Accepted Manuscript

Optimal Scheduling of Plug-in Electric Vehicles and Renewable Micro-grid in Energy and Reserve Markets Considering Demand Response Program



Parinaz Aliasghari, Behnam Mohammadi-Ivatloo, Manijeh Alipour, Mehdi Abapour, Kazem Zare

PII: S0959-6526(18)30715-7  
DOI: 10.1016/j.jclepro.2018.03.058  
Reference: JCLP 12316  
To appear in: *Journal of Cleaner Production*  
Received Date: 21 September 2017  
Revised Date: 05 March 2018  
Accepted Date: 06 March 2018

Please cite this article as: Parinaz Aliasghari, Behnam Mohammadi-Ivatloo, Manijeh Alipour, Mehdi Abapour, Kazem Zare, Optimal Scheduling of Plug-in Electric Vehicles and Renewable Micro-grid in Energy and Reserve Markets Considering Demand Response Program, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.03.058

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## Optimal Scheduling of Plug-in Electric Vehicles and Renewable Micro-grid in Energy and Reserve Markets Considering Demand Response Program

Parinaz Aliasghari<sup>1</sup>, Behnam Mohammadi-Ivatloo<sup>1,\*</sup>, Manijeh Alipour<sup>1</sup>, Mehdi Abapour<sup>1</sup>, Kazem Zare<sup>1</sup>

<sup>1</sup> Faculty of Electrical and Computer Engineering, University of Tabriz, Tabriz, Iran

\*Corresponding author: mohammadi@iee.org

### Abstract

Plug-in electrical vehicles (PEVs) are introduced as a compatible transportation system for the environment. Manufacturing technology of electric vehicles (EVs) could bring an opportunity to implement them as energy storages. By expanding the use of renewable energy sources (RESs), the role of energy storage system is highlighted to overcome power generation fluctuations. Integrating PEVs and RESs could be profitable for both PEV and RESs owners. In this paper, a structure of renewable energy sources based micro grid (RMG) is considered. The proposed RMG has been equipped with a parking lot in order to control and aggregate PEVs. This paper investigates the optimal energy management problem of the RMG with the presence of PEVs. The objective of the RMG owner is to minimize the cost through generating power with its local generators and trading energy with the power market considering the market price. Also, the RMG could incentive PEV owners to take part in the demand response (DR) programs as a flexible load. It could bring profit for both PEVs and RMG owners. The existence uncertainties are modeled in the scenario-based framework. Three case studies are analyzed to display the effectiveness of the proposed model. As a result, utilization of the parking lot has decreased the

Download English Version:

<https://daneshyari.com/en/article/8096174>

Download Persian Version:

<https://daneshyari.com/article/8096174>

[Daneshyari.com](https://daneshyari.com)