

Title: Smart Electric Vehicle Charging System

Author(s): Ferreira, João C.¹; Monteiro, Vítor; Afonso, João L.; Silva, Alberto¹

Source: 2011 IEEE Intelligent Vehicles Symposium (IV) **Book Series:** IEEE Intelligent Vehicles Symposium

Pages: 758-763 **Published:** 2011

Document Type: Proceedings Paper

Language: English

Abstract: In this work is proposed the design of a system to create and handle Electric Vehicles (EV) charging procedures, based on intelligent process. Due to the electrical power distribution network limitation and absence of smart meter devices, Electric Vehicles charging should be performed in a balanced way, taking into account past experience, weather information based on data mining, and simulation approaches. In order to allow information exchange and to help user mobility, it was also created a mobile application to assist the EV driver on these processes. This proposed Smart Electric Vehicle Charging System uses Vehicle-to-Grid (V2G) technology, in order to connect Electric Vehicles and also renewable energy sources to Smart Grids (SG). This system also explores the new paradigm of Electrical Markets (EM), with deregulation of electricity production and use, in order to obtain the best conditions for commercializing electrical energy.

KeyWords Plus: Framework

Reprint Address: Ferreira, JC (reprint author), GulAA ISEL, Lisbon, Portugal.

Addresses:

1. GulAA ISEL, Lisbon, Portugal

E-mail Address: jferreira@deetc.isel.ipl.pt; vmonteiro@dei.uminho.pt; jla@dei.uminho.pt; alberto.silva@acm.org

Publisher: IEEE

Publisher Address: 345 E 47TH ST, New York, NY 10017 USA

ISSN: 1931-0587

ISBN: 978-1-4577-0891-6

Citation: FERREIRA, João C.; MONTEIRO, Vítor; AFONSO, João L.; SILVA, Alberto - Smart Electric Vehicle Charging System. 2011 IEEE Intelligent Vehicles Symposium (IV). ISSN 1931-0587. ISBN 978-1-4577-0891-6. (2011) p. 758-763.