A) General Information

Acronym: DEVAGRA
Title of Project: Development of a vector control algorithm for a grid-connected renewable agent

TA Call:
Host research infrastructure: ICCS-NTUA –Athens - Gr

Start Date: 2nd Feb 2013
End Date: 3rd March 2013

Lead user: D. Néstor Francisco Guerrero Rodríguez - Universidad Politecnica de Cartagena - Spain
Additional users: Dr. Alexis B. Rey Boué - Universidad Politecnica de Cartagena - Spain

B) Summary of the project

This proposal is trying to implement a vector control algorithm for renewable agents. The control algorithms will be tested by using the hardware-in-the-loop simulation techniques in which the plant will be modelled and run in real time, whereas a real controller will embed the control algorithms for its validation. In this way, some perturbations which are not possible to evaluate in a physical situation, must be imposed to the real-time simulation of the 3-phase low voltage utility grid.

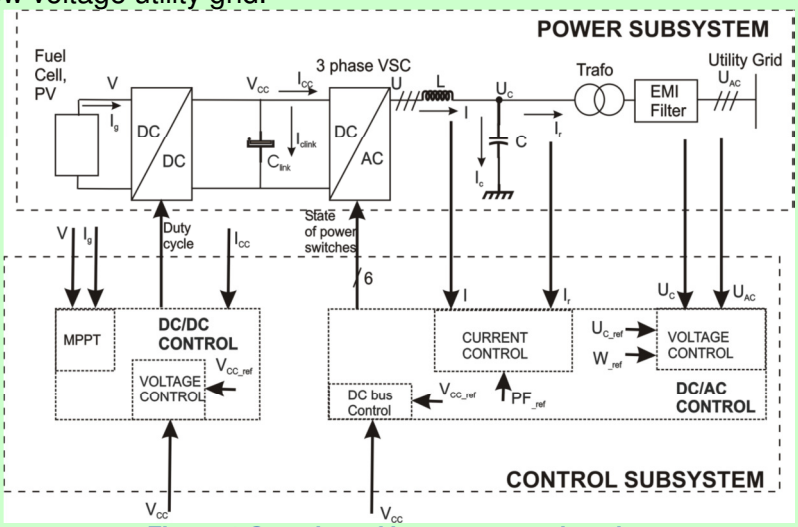

Figure 1 Overview of inverter control testing

C) Main objectives

- Demonstration of the vector control algorithm within on a RT-control hardware-in-the-loop environment
- Performance characterisation of the vector control algorithm against harmonics and unbalance.

D) Dissemination of the Results

A journal paper to IEEE Transactions on Power Systems
A conference paper, possibly to an IEEE ISGT meeting

E) Use of resources (expected)

a. Access days/units : 20
b. Stay days: 30