

	PROJECTS	Author	MCIA Center	
		Code / Rev.	1	
	MCIA CENTER INNOVATIONS ELECTRONICS		Date	2011
			Type	PUBLIC
			Page	1 of 1

VERDE, Spanish Government Research Project (2010-2013).

The CENIT VERDE Project includes objectives which will allow in the future, the development of products with international importance in the electromobility field. The project's objectives go beyond the research of technologies to develop revolutionary products related with Plug in Hybrid Electric Vehicle (PHEV) and Electric Vehicles (EV). The main points to assure the competitiveness of the companies are analyzed: Spanish automotive, power electronics and electric network distribution sectors are included. The VERDE Project is structured in seven main Activities:

Activity 1: *Study and definition of mechanical and electrical technologies in the electric vehicle.* Design and analysis of new electronic architecture applied on PHEV/EV. Moreover, operating ranges components selection and research and development of control and supervision algorithms.

Activity 2: *Research and development of energy storage systems.*

Study and development of technologies used in massive energy storage in PHEV/EV, especially chemical technology, with more capacity and less weight and volume than the current solutions.

Activity 3: *Research and development of traction systems.*

Research and the development of electronic technologies for PHEV/EV actuators design with more power density, more reliability and less weight than the current ones.

Activity 4: *Design and control of charge and discharge converters for battery management.*

The main objective of this activity is focused in the development of a high power and density bidirectional battery charger able to be connected to the communication infrastructure.

Activity 5: *Local infrastructure system for energy recharge.*

Connection technologies development between PHEV/EV and the electrical network, taking into account the bidirectional energy transfer, the energy supply and services invoicing.

Activity 6: *PHEV/EV integration in the electric system: infrastructure, networks and services.*

The objective consists in the analysis of the PHEV/EV integration in the electrical distribution network from a global point of view, and the stability and impact factor study in the current electrical network.

Activity 7: *Integration and validation of the developed technologies for PHEV/EV.*

The activity includes the experimental validation of the chemical and electro-mechanical technologies and developed algorithms over a demonstrator. Moreover, the criteria for PHEV/EV normalization are included in this activity.

